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Final Environmental Impact Report/  
Final Environmental Impact Statement

Executive Summary

June 1996

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# BART-SAN FRANCISCO AIRPORT EXTENSION

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**FINAL  
ENVIRONMENTAL IMPACT STATEMENT**

**FINAL  
ENVIRONMENTAL IMPACT REPORT**

**EXECUTIVE SUMMARY**

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**BART-SAN FRANCISCO INTERNATIONAL AIRPORT EXTENSION**

**NORTHERN SAN MATEO COUNTY  
CALIFORNIA**

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**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL TRANSIT ADMINISTRATION (FTA)**

**SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT (BART)  
SAN MATEO COUNTY TRANSIT DISTRICT (SAMTRANS)**

---

**WITH COOPERATING AGENCIES:**

**U.S. ARMY CORPS OF ENGINEERS  
FEDERAL HIGHWAY ADMINISTRATION  
FEDERAL AVIATION ADMINISTRATION**

**JUNE 1996**

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BART-San Francisco  
International Airport  
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## EXECUTIVE SUMMARY

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### **BART–San Francisco Airport Extension Final Environmental Impact Report/ Final Environmental Impact Statement**

The San Francisco Bay Area Rapid Transit District (BART) and the San Mateo County Transit District (SamTrans) are the local sponsors proposing to extend BART rail transit service to the vicinity of the San Francisco International Airport (SFIA). The Federal Transit Administration (FTA) is the federal sponsor for the project. The project corridor for this proposed extension is located in the larger nine-county region known as the San Francisco Bay Area (see Figure S-1). The corridor encompasses the northern portion of San Mateo County through the communities of Colma, South San Francisco, San Bruno, Millbrae, and Burlingame. The corridor generally follows the Southern Pacific Transportation Company (SPTCo) San Bruno branch between Colma and San Bruno, and then merges with the CalTrain mainline between San Bruno and Burlingame. The proposed rail transit project within this corridor is known as the Aerial Design Option Locally Preferred Alternative (LPA).

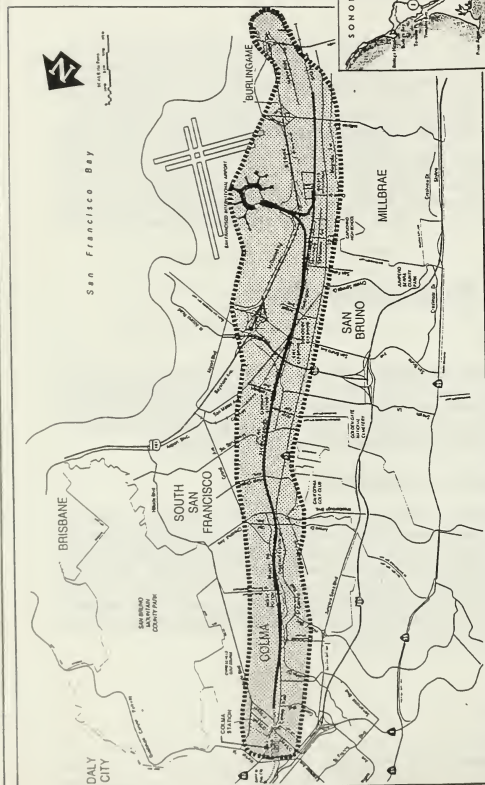
## **Project Background, Purpose, and Need**

### **Is this Project a New Idea?**

The BART–San Francisco Airport Extension has had a long history, dating back to 1972, when the *San Francisco Airport Access Project Report* first recommended the concept of bringing BART to the San Francisco International Airport (SFIA). Over the past 24 years, a number of milestones have brought this important regional connection closer to fruition. Table S-1 identifies some of the more significant planning studies and milestones.

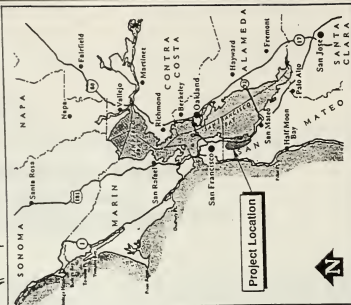
### **What is this Project Supposed to Accomplish?**

Since its inception, the reasons for a BART connection to SFIA have remained relatively constant: to provide a mass transit alternative for travelers along the San Francisco Peninsula, particularly northern San Mateo County, and to provide high-speed, efficient transit service between San Francisco, San Mateo County, and the growing SFIA. In addition, the emergence of other major employment centers in the East Bay and the Peninsula means the desire to travel among the Bay Area counties and to the region's airports has increased. The BART extension into San Mateo County offers a regional transit connection linking the East Bay, West Bay, and SFIA.



**BART - San Francisco Airport Extension Project Corridor**

**San Francisco Bay Area**



**FIGURE**

**Project Corridor**

**S-1**

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**Table S-1**  
**Milestones in BART–San Francisco Airport Extension Planning Efforts**

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1972	■ The <i>San Francisco Airport Access Project Report</i> studied various BART alignments to the SFIA.
1984	■ The Senate Concurrent Resolution 74 – Peninsula Mass Transit Study compared alignments and travel modes from San Francisco to San Jose.
1988	■ Metropolitan Transportation Commission (MTC) New Rail Transit Starts and Extensions Program (Resolution No. 1876) listed the BART–San Francisco Airport Extension as the first regional priority for federal funding.
1989	■ MTC authorized to lead a pre-Alternatives Analysis screening process.
1990	■ U.S. Department of Transportation, Urban Mass Transportation Administration (UMTA) approved MTC's request to initiate Alternatives Analysis process.
3/1991	■ Intermodal Surface Transportation Efficiency Act of 1991 called for completion of the BART–San Francisco Airport Extension with funding “earmarked” for the project.
5/1992	■ BART Board of Directors adopted resolution defining the Locally Preferred Alternative (known as the 1992 LPA), signaling selection of a preferred alternative alignment for which further environmental and engineering studies were prepared.
6/1992	■ MTC Policy Committee recommended the 1992 LPA.
6/1992	■ SamTrans Board of Directors and MTC adopted 1992 LPA; BART board reaffirmed 1992 LPA.
7/1992	■ BART submitted grant application for final environmental documentation and preliminary engineering.
10/1992	■ U.S. Department of Transportation, Federal Transit Administration (FTA, formerly UMTA) approved continuation of environmental work and preliminary engineering.
5/1993	■ FTA Award of Grant for final environmental documentation and preliminary engineering.
11/1995	■ BART and SamTrans Boards of Directors adopted resolution selecting the Aerial Design Option to Alternative VI as new the LPA (known as the Aerial Design Option LPA).
1/1996	■ FTA concurred with selection of the Aerial Design Option LPA.

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Source: BART West Bay Extensions; Ogden, 1996.

## Why Do We Need This Project?

A number of circumstances prompt the need for this extension of BART service. Highlighted below are the principal reasons why the project is being advanced and why it is especially timely.

**Regional Travel Demand.** Regional travel forecasts indicate that traffic flow from San Mateo and Santa Clara counties to downtown San Francisco will increase 16 percent between 1987 and 2010, and traffic to and from the SFIA will increase 52 percent over the same period.

**Highway 101/Interstate 280 Congestion.** Given the regional travel demand noted above, the burden on the Peninsula's two primary north/south highways will increase. The California Department of Transportation (Caltrans) indicates that traffic on these critical arteries near the SFIA and into San Francisco already regularly exceeds capacity. With projected demand, the periods of stop-and-go conditions on the highways will rise significantly.

**Airport Growth.** The SFIA has recently embarked upon a major expansion program that will increase the number of annual air passengers by 70 percent between 1990 and 2006. Since more than 65 percent of air passengers and employees drive to the SFIA, automobile congestion will increase dramatically without better connections to the regional rail transit network.

**Regional Air Quality.** Air quality attainment plans prepared under state and federal law by the Bay Area Air Quality Management District, with the cooperation of the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments, include a variety of measures intended to improve air quality to the level of the state and federal standards, and then to maintain air quality at that level. One of the key transportation-related measures is the expansion of regional rail transit, with extension of BART to the San Francisco International Airport specifically identified as part of that expansion. The BART-San Francisco Airport Extension, combined with other regional rail projects, is projected to reduce reactive hydrocarbon by 1.2 tons per day, nitrogen oxides by 1.7 tons per day, and carbon monoxide by 17.0 tons per day.

**Public Mandate.** The BART-San Francisco Airport Extension has long received favorable public support. In November 1985, San Mateo County voters overwhelmingly passed Measure A which authorized SamTrans to allocate funds for the BART Colma extension. In November 1987, San Mateo County voters approved Measure K which provided for the use of SamTrans funds for a BART extension beyond Colma to the San Francisco Airport. In June 1994, San Francisco voters approved Proposition I which directed San Francisco officials to "take all actions necessary" to extend BART service into the airport terminal area.

The BART extension has strong regional support, as demonstrated by a number of actions by public agencies. In 1988, MTC, the regional entity responsible for assigning transportation priorities and channeling state and federal funds, approved Resolution No. 1876, which (as amended in 1989) affirms the priority status of the BART-San Francisco Airport Extension for federal funding. In April 1996, the Governor of California notified the U.S. Senate Appropriations Committee that the project is one of the top three priority transportation projects in the state.

# **Purpose of the EIR/EIS**

## **Why is an EIR/EIS prepared?**

An Environmental Impact Report (EIR) is prepared pursuant to the California Environmental Quality Act (CEQA). This legislation requires project sponsors to prepare a document that describes the nature of the project, the potential physical environmental effects of the project (particularly those considered “significant”), various measures to reduce or eliminate significant effects, and possible alternatives that could achieve the project’s objectives and minimize some of the significant effects. The legislation also encourages public and agency comments on impacts and alternatives as part of the process of selecting a preferred project. An Environmental Impact Statement (EIS) is prepared pursuant to the National Environmental Policy Act (NEPA) and is intended to similarly document potential effects of the project on the human and physical environments.

The proposed extension of BART to the vicinity of the SFIA is subject to both the federal requirements for preparation of an EIS under NEPA and the state requirements for preparation of an EIR under CEQA. In any instance in which a project is subject to both NEPA and CEQA, federal and state or local agencies are encouraged to work closely with one another to prepare a single document which complies with both laws. Thus, this joint EIR/EIS is the result of collaboration between BART, SamTrans, and FTA to meet both the letter and the spirit of NEPA, CEQA, and all other applicable federal and state laws. The joint document has been prepared in compliance with the more stringent requirements, whether they be federal or state.

## **Where are We in the Environmental Review Process?**

The environmental review process calls for the preparation of a draft document, followed by a review period during which the public and agencies can make comments on the adequacy of the document and the merits of the different project alternatives it describes. Responses to these comments are then prepared and incorporated into a final document. These steps have now been completed as described below. The final steps in the state CEQA process before the Aerial Design Option LPA can be adopted occurs when BART and SamTrans “certify” the environmental document to be complete. The parallel final step in the federal NEPA process occurs when FTA issues a Record of Decision that specifies the agency’s decision, the alternatives considered, and whether all practicable means to avoid or minimize environmental harm have been adopted.

## **What is in the FEIR/FEIS?**

The Final Environmental Impact Report/Final Environmental Impact Statement (FEIR/FEIS) contains engineering and environmental analyses of the Aerial Design Option LPA and responses to public comments on the draft environmental documents. More specifically, the FEIR/FEIS describes impacts and mitigations for the Aerial Design Option LPA and responds to public comments received on the Draft EIR/Supplemental Draft EIS (DEIR/SDEIS) released in January 1995, and on the Focused Recirculated Draft EIR/Supplemental #2 Draft EIS (FRDEIR/S#2DEIS) released in September 1995. The final environmental documents include:

- this Executive Summary;
- Volume I, impact analysis and mitigations for the Aerial Design Option LPA;



- Volume II, responses to written and oral comments to the DEIR/SDEIS;
- Volume III, responses to written and oral comments to the FRDEIR/S#2DEIS;
- Volume IV, Design Appendix (Conceptual Design Drawings); and
- Volume V, technical appendices concerning primarily cultural and biological resources.

Figure S-2 illustrates the organization of the environmental documents. BART, SamTrans, and FTA, after review of the FEIR/FEIS, and consideration of other factors, such as financial and engineering feasibility, local support, and cost-effectiveness will decide whether to extend BART to the SFIA.

## Selection of the Preferred Alternative

### What Steps Preceded Selection of the Aerial Design Option LPA?

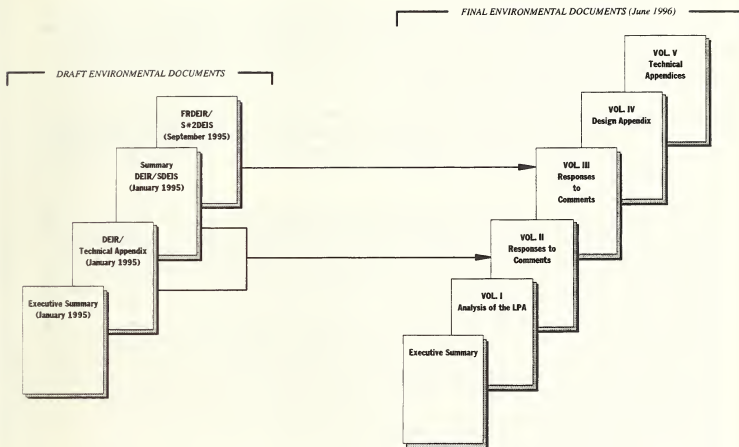
Three separate environmental documents have preceded this FEIR/FEIS. Each represents a step toward refining and selecting an alternative for implementation. The Alternatives Analysis/Draft Environmental Impact Statement/Draft Environmental Impact Report (AA/DEIS/DEIR), completed by MTC, BART, SamTrans, and FTA in 1992, considered a range of alternatives to improve mass transit service in northern San Mateo County and provide a transit connection between San Francisco, San Mateo County, and the SFIA. The AA/DEIS/DEIR evaluated five different BART alternatives, in addition to a "No Build" scenario and a Transportation Systems Management Alternative that focused on enhancing other existing transit systems.

In Spring 1992, a Locally Preferred Alternative (LPA) was nominated. Because of the long history of this project and the subsequent identification of other LPAs, this LPA is known as the 1992 LPA. This alternative consisted of the extension of BART to a terminus station about one mile west of the SFIA terminals, with connections to the SFIA via an Airport Light Rail System and to Highway 101 via new access roads and ramps. Other stations were proposed at Hickey Boulevard in South San Francisco and the Tanforan Shopping Center in San Bruno. Before the project could be adopted, however, BART and SamTrans were obligated to review public comments on the AA/DEIS/DEIR and to prepare responses in a final document. Because public and agency comments were extensive, recommended more detailed analyses, and identified viable alternatives to those studied in the AA/DEIS/DEIR, BART and SamTrans elected instead to respond to the comments by providing more detailed information and considering other alternatives in a new DEIR. FTA concurred with this decision and recommended that a supplement to the DEIS (SDEIS) be prepared concurrently.

The resulting DEIR/SDEIS examined five alternatives including the 1992 LPA as well as other new alternatives that had been proposed during public review provided refined traffic analysis around station locations; more thoroughly discussed wetland impacts and construction-period impacts; and considered project impacts that could cumulate with other planned development.

In April 1995, the BART and SamTrans Boards of Directors selected Alternative VI-BART to Millbrae via the planned Airport International Terminal as the new LPA, thus recommending this alternative for further environmental and engineering studies. For





clarification, this LPA is known as the Alternative VI LPA. The boards selected Alternative VI for the following reasons:

- **Greatest Community Support.** Daly City, Colma, South San Francisco, San Bruno, and Millbrae registered support for Alternative VI, with conditions.
- **Greatest Improvement in Regional Mobility.** Alternative VI would provide the highest level of BART ridership, increase new transit ridership, and provide for intermodal connections between BART, CalTrain, SamTrans, and the SFIA Airport Light Rail System.
- **Preservation and Enhancement of the Environment.** The California Department of Fish and Game and the U.S. Environmental Protection Agency commented that Alternative VI would likely be the Least Environmentally Damaging Practicable Alternative, since it would result in the fewest impacts to wetlands and the habitat of threatened and endangered species.
- **Direct Connectivity into the Airport.** Alternative VI would provide direct service into the SFIA for the highest number of passengers, offering high-speed, efficient transit service between San Mateo County, the SFIA, San Francisco, and the rest of the Bay Area.

The Alternative VI LPA route follows the San Bruno branch of the SPTCo railroad between Colma and San Bruno, and then merges with the CalTrain mainline through downtown San Bruno. South of Angus Avenue in San Bruno, the BART subway alignment turns southeast under Highway 101 to the planned International Terminal at the SFIA, and then turns southwest back under Highway 101 to the CalTrain mainline. The proposed extension terminates at a station at Millbrae Avenue in Millbrae with a tailtrack extending 1,500 feet into Burlingame. Stations would be provided at Hickey Boulevard, Tanforan Park Shopping Center, SFIA at the planned International Terminal, and a BART/CalTrain intermodal station at Millbrae Avenue. This LPA calls for subway between Colma and South Spruce Avenue in South San Francisco; a retained cut alignment from South Spruce Avenue to San Bruno Avenue in San Bruno; a subway alignment through downtown San Bruno turning southeast to the planned Airport International Terminal and returning to the CalTrain mainline at Hillcrest Avenue in Millbrae; and an at-grade Millbrae Avenue Station with tailtracks extending south to Trousdale Avenue in Burlingame.

In response to public and agency comments on the DEIR/SDEIS and mandates of the U.S. Congress and MTC to reduce project costs, refinements to the Alternative VI LPA were proposed and subsequently analyzed in the Focused Recirculated DEIR/Supplemental #2DEIS (FRDEIR/S#2DEIS), which evaluated a primary design option to Alternative VI. Rather than tunnel into the SFIA, this design option proposes an aerial alignment across Highway 101 and the SFIA property between Highway 101 and the CalTrain mainline. Because a new option was proposed for bringing BART service to the SFIA, CEQA and NEPA require that the environmental consequences of the option be analyzed and disclosed to the public. To satisfy this mandate to present analyses of the new option, the document constituted a “recirculation” of the DEIR prepared pursuant to CEQA and a supplement to the DEIS prepared pursuant to NEPA. (The document was a second supplement to the DEIS in that it supplemented both the AA/DEIS/DEIR and the DEIR/SDEIS.) Because the Aerial Design Option modified only a segment of the Alternative VI LPA, the new environmental analyses concentrated on effects of the aerial guideway to the airport, the mainline paralleling CalTrain between the Armory in San Bruno and the Millbrae Avenue Station, and

the Millbrae and Burlingame tailtracks. Consequently, the FRDEIR/S#2DEIS did not evaluate the segment of the Alternative VI LPA alignment between Colma and Angus Avenue in San Bruno.

## **What is the LPA?**

The Aerial Design Option was adopted as the new LPA by the BART and SamTrans boards in November 1995. FTA concurred with the selection of the Aerial Design Option in January 1996.

The Aerial Design Option LPA provides a total of 8.2 miles of new revenue service track, consisting of 7.4 miles of straight-through mainline track from the Colma BART Station tailtracks to a BART/CalTrain Station at Millbrae Avenue and a 0.8-mile east-west aerial wye-stub perpendicular to the CalTrain-BART mainline terminating at the planned San Francisco Airport International Terminal (see Figure S-3). In the segment between Angus Avenue in San Bruno and the end of the Millbrae Avenue Station tailtracks in Burlingame, this design option would provide an east-west aerial guideway to the Airport International Terminal, constructed by the SFIA instead of the tunneled subway alignment to the planned Airport International Terminal under Alternative VI. The Aerial Design Option LPA would also provide straight-through mainline service along the CalTrain right-of-way from the Tanforan Station in San Bruno to a Millbrae BART/CalTrain Station located at Millbrae Avenue.

The proposed project incorporates certain design refinements suggested by Daly City, Colma, South San Francisco, San Bruno, Millbrae, Burlingame, San Mateo County, and the U.S. Fish and Wildlife Service in their comments on the DEIR/SDEIS and FRDEIR/S#2DEIS. The design refinements incorporated into the proposed project are summarized below:

- 1) drainage improvements to Colma Creek in the vicinity of the Hickey Station in South San Francisco to mitigate flooding impacts;
- 2) lowering the BART subway profile under South Spruce Avenue in South San Francisco to mitigate impacts on local circulation, access for properties along the street, and an adjacent play lot;
- 3) south of South Spruce Avenue, placement of the alignment in subway and shifting it west into the San Francisco Water Department right-of-way in order to minimize noise and visual impacts and in order to accommodate the redesign of the Tanforan Station;
- 4) modification of the Tanforan Station plan to incorporate certain elements of the Tanforan/BART Concept Plan by the City of San Bruno, including the realignment of Huntington Avenue into the former SPTCo right-of-way, shifting the station westward onto the Tanforan Park Shopping Center, and placing the station in subway, in order to minimize impacts on the Fifth Addition neighborhood and to create a station design that is better integrated with the Tanforan Park Shopping Center;
- 5) incorporation of a three-track configuration through the Millbrae Avenue Station, in order to facilitate transfers between BART and CalTrain;



- 6) modification of the Millbrae Avenue Station plan to improve local circulation and to support the City of Millbrae's objectives for economic development in the station vicinity; and
- 7) relocation of the car wash facility from the SFIA west of Highway 101 parcel to the Daly City Shop/Yard at the Colma Station, in order to avoid impacts to the wetlands and to habitat of the endangered San Francisco garter snake.

## **Impacts of the Aerial Design Option LPA**

### **How will the Aerial Design Option LPA Change the Existing Environmental Setting?**

A summary of the Aerial Design Option LPA's key impacts (or effects) and measures to reduce these impacts is presented in Table S-2. The impacts identified in Table S-2 are operational effects, i.e., those that would occur if the project were constructed and operating. In addition to operational effects, there are a number of impacts that would occur during the construction period (see Table S-3). In some cases, the impact is not, strictly speaking, an environmental effect, but is presented in the tables as an impact in an effort to fully inform the public.

Cumulative impacts are those resulting from the Aerial Design Option LPA in combination with other known and foreseeable projects, such as the San Francisco International Airport Master Plan and the El Camino Corridor redevelopment project in South San Francisco. Cumulative impacts that would occur under the Aerial Design Option LPA are summarized in Table S-4.

### **Can the Impacts be Reduced or Eliminated?**

For significant adverse impacts identified for the Aerial Design Option LPA, the FEIR/FEIS recommends mitigation measures to reduce or eliminate the impacts. In some instances, the proposed mitigation measure will not reduce the impact to an insignificant level, in which case, the impact remains significant and "unavoidable." Unavoidable, significant effects identified in this FEIR/FEIS are specially noted in Table S-2. Before the project can be adopted, BART and SamTrans are required to examine each of these unavoidable, significant impacts and determine whether the benefits associated with the project outweigh the adverse effects. Similarly, FTA must state whether all practicable means to avoid or minimize environmental harm have been taken, and if not, why they were not.

Table S-2  
Summary of Key Impacts and Mitigation Measures

Issue	Impact	Mitigation Measure
<b>Transit Ridership</b>		
	Increase in daily regional BART ridership of 37,600 passengers versus No Build in 1998.	• Beneficial effect; no mitigation required.
	Daily BART patronage in San Mateo County of 90,000 (entrances and exits) in 1998.	• Beneficial effect; no mitigation required.
<b>Traffic</b>		
Freeways (vs. 1993 No Build conditions)	Reduced regional congestion.	• Beneficial effect; no mitigation required.
	Reduced traffic volumes at the Highway 101 weaving sections between SFIA and Millbrae.	• Beneficial effect; no mitigation required.
	Reduced Highway 101 Level of Service between Millbrae and Third Avenues in 1998 and 2010 and between SFIA and Millbrae in 2010 and between SFIA and Millbrae in 2010.	• No feasible mitigation measure; impact would be significant and unavoidable.
	Reduced Highway 101 weaving operations between the northbound loop on-ramp and off-ramp connecting Millbrae Avenue and Highway 101.	• Contribute to future interchange improvements.
Local Intersections (vs. 1993 No Build conditions)	Reduced LOS at one new and three existing intersections during peak hours:	
	- New intersection at Hickey Station exit/Hickey Boulevard extension.	• Install all-way stops at Hickey Station exit and the Hickey Boulevard extension.
	- El Camino Real/Sneath Lane intersection.	• Contribute to traffic improvements at El Camino Real/Sneath Lane, and Sneath and Burger King/Sears entrance intersections, based on BART's share of impact.
	- Sneath Lane/Sears entrance intersection.	
	- El Camino Real/Millbrae Avenue intersection.	• Contribute to future intersection improvements. Until improvements constructed, impact would be significant and unavoidable.
<b>Parking</b>	Reduced parking demand (by 2010) at Daly City and Colma Stations.	• Beneficial effect; no mitigation required.

**Table S-2 (continued)  
Summary of Key Impacts and Mitigation Measures**

<b>Issue</b>	<b>Impact</b>	<b>Mitigation Measure</b>
<b>Land Use</b>	Use of Tanforan Park Shopping Center lots by BART patrons.	<ul style="list-style-type: none"> <li>Discourage BART patrons' use of Tanforan Park Shopping Center lots through physical barriers and monitoring.</li> </ul>
	Use of BART parking lots by airport passengers to access SFTA.	<ul style="list-style-type: none"> <li>Provide and enforce parking restrictions.</li> <li>Implement pricing surcharge and other administrative mechanisms, as necessary.</li> </ul>
	General consistency with general plans of Colma, South San Francisco, and San Bruno, and with Millbrae Station Area Concept Plan. Conflicts with Millbrae General Plan.	<ul style="list-style-type: none"> <li>No mitigation required; BART is not required to conform to local regulations.</li> </ul>
	Displacement of approximately ten businesses and 208 residences (55 employees and up to 525 residents).	<ul style="list-style-type: none"> <li>Develop a relocation plan pursuant to federal and state law, and provide real estate workshops and relocation assistance; social effect would remain significant and unavoidable.</li> </ul>
<b>Community Cohesion/Economic Activity</b>	Disruption of local social patterns of shopping, circulation, and neighborhood activities due to displacement.	<ul style="list-style-type: none"> <li>No feasible mitigation; impact would be significant and unavoidable.</li> </ul>
	Potential adverse effect on economic activity and municipal and school tax revenues in Millbrae due to residential displacement.	<ul style="list-style-type: none"> <li>Provide relocation assistance pursuant to federal and state law; social effect would remain significant and unavoidable.</li> </ul>
<b>Regional Economic Activity</b>	Relocation of Millbrae Gardens, therefore reducing supply of low-cost housing.	<ul style="list-style-type: none"> <li>No feasible mitigation; impact would remain significant and unavoidable.</li> </ul>
	Creation of 675 to 1,125 direct and indirect jobs.	<ul style="list-style-type: none"> <li>No mitigation required.</li> </ul>



Table S-2 (continued)  
Summary of Key Impacts and Mitigation Measures

Issue	Impact	Mitigation Measure
<b>Visual Quality</b>		
Built Environment	Scale incompatibility between Millbrae Avenue Station and Bayside Manor neighborhood/commercial buildings.	<ul style="list-style-type: none"> <li>• None available; impact would be significant and unavoidable.</li> </ul>
Scenic Resources	Removal of mature trees within cemeteries in Colma, and along Antonette Lane and Memorial Avenue in South San Francisco.	<ul style="list-style-type: none"> <li>• Plant replacement trees; until maturation, there would be short-term significant and unavoidable effects.</li> </ul>
	Contrast between aerial guideways and natural setting, and obstruction of views of San Bruno Mountain.	<ul style="list-style-type: none"> <li>• No feasible mitigation; impact would remain significant and unavoidable.</li> </ul>
Sensitive Receptors	Perception of encroachment for Meadowbrook Trailer Park residents due to Daily City Shop/Yard sound wall.	<ul style="list-style-type: none"> <li>• No feasible mitigation; impact would be significant and unavoidable.</li> </ul>
	Glare from parking area lights.	<ul style="list-style-type: none"> <li>• Provide station lighting fixtures that minimize spillover light and glare.</li> </ul>
Streetscape	Potential enhancement of streetscape in South San Francisco as a result of Hickey Station.	<ul style="list-style-type: none"> <li>• Beneficial effect; no mitigation required.</li> </ul>
<b>Cultural Resources</b>		
	Potential disturbance to common paleontological resources.	<ul style="list-style-type: none"> <li>• No mitigation required.</li> </ul>
	Removal and reconstruction of the arched, cut-stone bridge in South San Francisco.	<ul style="list-style-type: none"> <li>• Record bridge as part of the National Park Services Historic Engineering Record.</li> <li>• Dismantle and reassemble headwall under direction of a professional stonemason.</li> <li>• Construct concrete replica bridge and reassemble original headwall.</li> <li>• Provide a historical bridge marker.</li> </ul>



**Table S-2 (continued)**  
**Summary of Key Impacts and Mitigation Measures**

Issue	Impact	Mitigation Measure
<b>Community Services and Facilities</b>	Increased demand for local police, fire, and emergency services.	<ul style="list-style-type: none"> <li>• No mitigation required. While this effect may generate community concern, increased demand is not an environmental impact. Communities could:               <ul style="list-style-type: none"> <li>- Restructure beats, shift administrative tasks to civilians currently on city staff, and encourage neighborhood surveillance programs.</li> <li>- Relocate fire station to improve service and install onsite fire protection devices and interlocking signal light systems to facilitate emergency response.</li> </ul> </li> <li>• No mitigation required.</li> </ul>
	Minimal increase in water demand and wastewater treatment requirements.	
	<b>Geology, Soils, and Seismicity</b>	
	Exposure of BART facilities to potentially strong, seismically induced groundshaking and lateral pressures.	<ul style="list-style-type: none"> <li>• No mitigation required; BART will incorporate design criteria into contractor plans and specifications to minimize groundshaking.</li> </ul>
	Exposure of proposed facilities on SFIA property to potentially strong, seismically induced groundshaking.	<ul style="list-style-type: none"> <li>• Develop seismic design criteria for SFIA structures to minimize groundshaking and incorporate into contractor plans and specifications.</li> </ul>
	Exposure of BART facilities overlying Bay mud to seismically-induced liquefaction and settlement.	<ul style="list-style-type: none"> <li>• No mitigation required; BART will incorporate design criteria into contractor plans and specifications to minimize liquefaction and settlement.</li> </ul>
	Susceptibility of facilities not in Bay mud to long-term ground settlement.	<ul style="list-style-type: none"> <li>• No mitigation required; BART will incorporate design criteria into contractor plans and specifications to minimize settlement.</li> </ul>
	Exposure of BART facilities below groundwater level to upward force from water table.	<ul style="list-style-type: none"> <li>• No mitigation required; BART will incorporate design criteria into contractor plans and specifications to withstand upward force.</li> </ul>
	Potential exposure of underground structures to corrosive subsurface soils.	<ul style="list-style-type: none"> <li>• No mitigation required; BART will incorporate design criteria into contractor plans and specifications to minimize corrosion.</li> </ul>

Table S-2 (continued)  
Summary of Key Impacts and Mitigation Measures

Issue	Impact	Mitigation Measure
Biological Resources	Redirection, modification, and/or displacement of wetlands and other "waters of the U.S."	<ul style="list-style-type: none"> <li>• Create creekside and/or seasonal wetlands in Colma Creek area and restore temporarily disturbed wetlands.</li> </ul>
	Displacement and/or disturbances to habitats that support the San Francisco garter snake, the California red-legged frog, and the San Francisco forktail darters.	<ul style="list-style-type: none"> <li>• Enhance existing sensitive species habitats on the west of Bayshore parcel.</li> <li>• Create wetland habitat for sensitive species at site west of CalTrain tracks.</li> <li>• Undertake measures to protect, preserve, and manage an existing SFGS wetland/upland habitat in the region.</li> </ul>
Hydrology and Water Quality	Improved stormwater discharge due to reconstruction of a stretch of Colma Creek in South San Francisco.	<ul style="list-style-type: none"> <li>• Beneficial effect; no mitigation required.</li> </ul>
	Encroachment into 100-year floodplain in Colma, South San Francisco, and the west of Bayshore parcel, thereby increasing the risk of flooding in adjacent areas.	<ul style="list-style-type: none"> <li>• Elevate BART facilities; BART will incorporate drainage improvements along Colma Creek as part of project design.</li> </ul>
	Localized erosion at the outlets of new and modified drainageways.	<ul style="list-style-type: none"> <li>• Install stream bank protection at channel and culvert outlets.</li> </ul>
	Low increase in runoff volume (20 cfs) due to minimal increases in impermeable surfaces.	<ul style="list-style-type: none"> <li>• No mitigation required.</li> </ul>
	Contribution to local nonpoint source stormwater pollution in runoff from BART parking lots.	<ul style="list-style-type: none"> <li>• Install and regularly clean oil and water separators in catch basins.</li> </ul>
	Potential contamination of the Colma/Merced aquifers along below-grade portions of the alignment.	<ul style="list-style-type: none"> <li>• Apply Best Management Practices to reduce pollutants that could be washed into the aquatic habitat.</li> <li>• Use grout sealant or equivalent measures.</li> </ul>

**Table S-2 (continued)**  
**Summary of Key Impacts and Mitigation Measures**

Issue	Impact	Mitigation Measure															
Noise and Vibration	Possible airborne noise impacts from wheel truing machine.	<ul style="list-style-type: none"><li>• Use acoustically sound building design and enclosure materials.</li><li>• Construct noise shields around the wheel truing machine, if needed.</li><li>• Provide sound barriers, if needed, at vehicle doors to the maintenance building.</li><li>• Erect an at-grade sound wall, if needed.</li><li>• Erect an at-grade sound wall, or redesign the turntable to minimize noise.</li><li>• Use floating slab trackbed, resiliently supported ties, soft rail fasteners, or equivalent noise reduction devices, as appropriate.</li><li>• Use off-site mitigation measures, such as isolating affected buildings at points of ground contact, as alternatives to on-site measures, as appropriate.</li><li>• Lower the track profile, as an alternative to a floating slab trackbed.</li><li>• Erect a sound wall along at-grade segments.</li><li>• Construct an aerial structure sound barrier wall, or implement other equivalent measures.</li></ul>															
	Airborne noise impacts from the proposed turntable at the Daly City Shop/Yard.																
	Groundborne noise and vibration impacts to a maximum of 73 and 68 sensitive receptors, respectively.																
	<table><tr><th></th><th>Groundborne Noise</th><th>Vibration</th></tr><tr><td>Colma</td><td>5</td><td>8</td></tr><tr><td>South San Francisco</td><td>43</td><td>100</td></tr><tr><td>San Bruno</td><td>2</td><td>23</td></tr><tr><td>Millbrae</td><td>23</td><td>37</td></tr></table>		Groundborne Noise	Vibration	Colma	5	8	South San Francisco	43	100	San Bruno	2	23	Millbrae	23	37	
		Groundborne Noise	Vibration														
Colma	5	8															
South San Francisco	43	100															
San Bruno	2	23															
Millbrae	23	37															
Airborne noise impacts to a maximum of 72 sensitive receptors from at-grade mainline and aerial portions.																	
<table><tr><th></th><th></th></tr><tr><td>Colma</td><td>0</td></tr><tr><td>South San Francisco</td><td>0</td></tr><tr><td>San Bruno</td><td>59</td></tr><tr><td>Millbrae</td><td>13</td></tr></table>			Colma	0	South San Francisco	0	San Bruno	59	Millbrae	13							
Colma	0																
South San Francisco	0																
San Bruno	59																
Millbrae	13																

Table S-2 (continued)  
Summary of Key Impacts and Mitigation Measures

Issue	Impact	Mitigation Measure
Air Quality	Reduced regional vehicular emissions by 1998, versus 1993 No Build (1000 tons/yr.):	• Beneficial effect; no mitigation required.
	• Carbon Monoxide	318.9
	• Nitrogen Oxides	13.8
	• Reactive Organic Gases	20.6
	• PM <sub>10</sub>	1.5
	Highest modeled net CO concentration in 1998:	
	• 1-Hour	13.7
	• 8-Hour	6.5
Public Health and Safety	Conformance with MTC Resolution No. 2270 and Clean Air Act.	• Beneficial effect; no mitigation required.
	Introduction of minimal volumes of hazardous materials.	• No mitigation required.
	Low likelihood of exposure to known nearby contaminated hazardous waste sites.	• No mitigation required.
	Minimal long-term exposure to electromagnetic fields (EMF) due to distance and use of shielding.	• No mitigation required.
	Regional energy consumption of 835.54 million Bus/day	• No mitigation required.
Energy	BART electrical requirements of 255.57 million Bus/day.	• No mitigation required.

**Table S-2 (continued)  
Summary of Key Impacts and Mitigation Measures**

Issue	Impact	Mitigation Measure
Section 4(f) Evaluation	No disturbance to parklands, unless contractor laydown Alternative A is selected, in which case, there would be possible constructive use at Lion's Field Park. Disturbance to significant cultural resources is described earlier in this table (see Cultural Resources on page S-14).	<p>If Alternative A laydown area is selected, the following measures will be implemented:</p> <ul style="list-style-type: none"> <li>• Coordinate vehicle routes and construction activities with local authorities to ensure neighborhood safety and minimize traffic, dust, and noise impacts.</li> <li>• Provide additional traffic controls where construction traffic enters major streets.</li> <li>• Provide acceleration and deceleration lanes to facilitate merging of construction traffic with Highway 101 traffic.</li> <li>• Erect temporary noise barriers where construction noise criteria cannot be met with available equipment.</li> <li>• Apply Best Management Practices to suppress dust.</li> </ul>
		<ul style="list-style-type: none"> <li>• Restrict parking and traffic on First Avenue, if necessary.</li> <li>• Create temporary haul route and construct a temporary noise barrier on the route, if necessary.</li> </ul>

Source: BART West Bay Extensions; Ogden, 1996.

**Table S-3  
Summary of Generalized Construction Impacts and Mitigation Measures**

Issue	Impact	Mitigation Measure
<b>Transportation</b>	Traffic detours and congestion resulting from street closures and lane restrictions and from construction-related truck trips.	<ul style="list-style-type: none"> <li>• Provide traffic detour signs and decking across streets.</li> </ul>
	Potential delays to SamTrans service.	<ul style="list-style-type: none"> <li>• Coordinate construction schedule with SamTrans.</li> </ul>
	Local traffic delays due to Millbrae Avenue Station construction.	<ul style="list-style-type: none"> <li>• Coordinate Hillcrest Boulevard Extension.</li> </ul>
	Neighborhood disruption and diminished access to local businesses.	<ul style="list-style-type: none"> <li>• Maintain two-way traffic on Rollins Road.</li> </ul>
	Potential safety hazards for pedestrians and bicyclists.	<ul style="list-style-type: none"> <li>• Decking across streets.</li> </ul>
Reduced parking areas along project corridor.		<ul style="list-style-type: none"> <li>• Keep adjacent sidewalks open during construction.</li> </ul>
	Potential delays to CalTrain service.	<ul style="list-style-type: none"> <li>• Provide cyclist detours.</li> </ul>
		<ul style="list-style-type: none"> <li>• Provide alternate cyclist routes.</li> </ul>
		<ul style="list-style-type: none"> <li>• Provide temporary replacement parking.</li> </ul>
		<ul style="list-style-type: none"> <li>• Provide a double shoofly to permit continuous two-track operations.</li> </ul>
<b>Land Use</b>	Temporary disruption to activities associated with businesses, neighborhoods, and cemeteries along the project corridor from traffic detours and construction truck trips.	<ul style="list-style-type: none"> <li>• Perform all work on installation and tie-in of shooflies during off-peak periods.</li> </ul>
		<ul style="list-style-type: none"> <li>• Distribute advanced passenger bulletins announcing potential service delays.</li> </ul>
		<ul style="list-style-type: none"> <li>• Maintain two-track operations during construction at Hillcrest Boulevard and Millbrae Station.</li> </ul>
		<ul style="list-style-type: none"> <li>• Temporarily relocate the San Bruno CalTrain Station.</li> </ul>
		<ul style="list-style-type: none"> <li>• Coordinate with cities and cemeteries along project corridor.</li> </ul>
		<ul style="list-style-type: none"> <li>• Provide traffic control.</li> </ul>

**Table S-3 (continued)**  
**Summary of Generalized Construction Impacts and Mitigation Measures**

<b>Issue</b>	<b>Impact</b>	<b>Mitigation Measure</b>
<b>Visual Quality</b>	Temporary disturbance to residents in Bayside Manor, Marino Vista, and North Millbrae neighborhoods.	<ul style="list-style-type: none"> <li>• Construct temporary visual and noise barriers.</li> </ul>
	Visual alteration due to loss of mature trees and presence of construction activities and vehicles.	<ul style="list-style-type: none"> <li>• Implement vegetation replacement plan to compensate for loss of mature trees.</li> </ul>
	Placement of construction activities, including sound barrier walls, close to residents, thereby creating a sense of encroachment and adversely altering the visual setting.	<ul style="list-style-type: none"> <li>• Erect laydown area visual barrier.</li> <li>• No feasible mitigation; impact would be significant and unavoidable.</li> </ul>
	Visual alteration of open space area between Highway 101 and the SPTCo/CalTrain mainline, opposite SFIA terminals.	<ul style="list-style-type: none"> <li>• No feasible mitigation; impact would be significant and unavoidable.</li> </ul>
<b>Cultural Resources</b>	Possible discovery of unknown subsurface archaeological resources.	<ul style="list-style-type: none"> <li>• Archaeological testing and compliance with State Historic Preservation Officer procedures.</li> </ul>
<b>Community Services</b>	Potential delays in emergency services response because of street closures and lane restrictions.	<ul style="list-style-type: none"> <li>• Coordinate vehicle routes with local jurisdictions.</li> </ul>
<b>Utilities</b>	Utility relocation and possible, temporary interruption of service.	<ul style="list-style-type: none"> <li>• Coordinate timing of service disruption.</li> <li>• Provide temporary backup service.</li> <li>• Notify customers of upcoming activities, delays, or other construction-related issues.</li> </ul>

Table S-3 (continued)  
Summary of Generalized Construction Impacts and Mitigation Measures

Issue	Impact	Mitigation Measure
Geology	Slope instability and settlement during excavation.	<ul style="list-style-type: none"> <li>• Dewatering and groundwater control of excavations.</li> <li>• Settlement monitoring program during construction.</li> </ul>
Biological Resources	Disturbance to sensitive biological resources, including wetlands and sensitive species.	<ul style="list-style-type: none"> <li>• Implement biological monitoring plan.</li> <li>• Install snake-proof (exclusion) fencing of preconstruction and construction areas.</li> <li>• Implement sensitive construction techniques and monitoring efforts.</li> <li>• Clear all construction sites on west of Bayshore parcel of SFGS.</li> <li>• Restore disturbed wetland sites.</li> <li>• Employ a construction monitor to assure that the mitigation measures are implemented successfully.</li> <li>• Limit access to alignment in vicinity of Colma Creek.</li> <li>• Manage and enhance existing aquatic habitats on the west of Bayshore parcel.</li> <li>• Replace and/or compensate for sensitive species habitat.</li> <li>• Install sediment basins or tanks.</li> <li>• Install slurry and/or sheet pile shoring walls.</li> <li>• Water construction site.</li> <li>• Prepare and implement erosion control plan.</li> </ul>
Hydrology	Increased erosion and sedimentation, with possible adverse effects on water quality.	<ul style="list-style-type: none"> <li>• Obtain NPDES construction permit to define specific mitigation measures to reduce the impact of stormwater discharge.</li> </ul>



**Table S-3 (continued)**  
**Summary of Generalized Construction Impacts and Mitigation Measures**

<b>Issue</b>	<b>Impact</b>	<b>Mitigation Measure</b>
	Interference with drainage patterns and floodplains.	<ul style="list-style-type: none"> <li>• Implement dry season construction so that drainageways will be operational during the wet season.</li> <li>• Maintain unobstructed drainageway diversions before existing drainageways are blocked off.</li> <li>• Implement a hazardous materials investigation of the project alignment and perform clean up of identified contamination prior to construction.</li> </ul>
<b>Noise</b>	Increased localized noise and vibration.	<ul style="list-style-type: none"> <li>• Utilize temporary noise barriers.</li> <li>• Use pre-drilled piles.</li> <li>• Use cast-in-drilled-hole piles.</li> <li>• Use soil-mix wall technology.</li> <li>• Use shielded pile drivers.</li> <li>• Use vibratory pile drivers.</li> <li>• Construct temporary road and noise barrier.</li> </ul>
<b>Air Quality</b>	Increased localized emissions of NO <sub>x</sub> , ROG, CO, PM <sub>10</sub> , and dust.	<ul style="list-style-type: none"> <li>• Provide construction site parking.</li> <li>• Install temporary traffic control.</li> <li>• Implement construction traffic management.</li> <li>• Maintain construction equipment engine.</li> <li>• Apply best construction practices.</li> </ul>

**Table S-3 (continued)**  
**Summary of Generalized Construction Impacts and Mitigation Measures**

Issue	Impact	Mitigation Measure
<b>Public Health</b>	Discovery of hazardous materials that could present health and safety concerns for construction workers and the general public.	<ul style="list-style-type: none"> <li>• Employ a Hazardous Materials Contingency Plan.</li> <li>• Site sampling and remediation.</li> <li>• Proper handling and disposal of hazardous materials discovered during construction.</li> </ul>
<b>Energy</b>	Substantial energy requirements to construct the facilities.	<ul style="list-style-type: none"> <li>• No feasible mitigation; impact would be significant and unavoidable.</li> </ul>

Source: BART West Bay Extensions; Ogden, 1996.

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**Table S-4**  
**Summary of Significant Cumulative Effects**

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**Transportation**

- Significant future traffic increases on Highway 101 between Millbrae and Third Avenue freeway segments.
- Increased congestion on the weaving sections of a Highway 101 collector road and on-and-off-ramps.
- Significant increase in congestion at the El Camino Real/Sneath Lane intersection.

**Land Use**

- Reduction of housing stock and businesses in South San Francisco.
- Beneficial effect of long-term job creation by local transit agencies, the SFIA, and local businesses.

**Visual Quality**

- Significant alteration of the visual setting in South San Francisco.
- Alteration of the natural appearance and views of the SFIA property west of Highway 101 by BART aerial guideways, in combination with new highway ramps.

**Community Services**

- Potential increase in demand for water and wastewater treatment in the project study area.

**Geology, Soils and Seismicity**

- Increase in the population exposed to seismic hazards.

**Biological Resources**

- Wetlands and sensitive species habitat would be lost and/or degraded along Colma Creek and on the west of Bayshore parcel.

**Hydrology and Water Quality**

- Potential increase in nonpoint source pollution through increased runoff from proposed development around the Hickey Station.

**Noise and Vibration**

- Increase in noise levels in the Lomita Park neighborhood of San Bruno.

**Air Quality**

- Beneficial effect of reduction in regional emissions of carbon monoxide, nitrogen oxides, reactive organic gases, and particulate matter due to a reduction in vehicle miles traveled.

**Energy**

- Beneficial effect of net decrease in regional energy requirements due to increased public transit ridership.

**Construction**

- Construction-related increase in noise, dust, construction traffic, movement of construction equipment, and visual disruption in South San Francisco and at the SFIA.
- Potential utility service interruptions in the vicinity of the project corridor.

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**Table S-4 (continued)**  
**Summary of Significant Cumulative Effects**

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**Construction (continued)**

- Potential construction-related settlement and erosion impacts in South San Francisco and/or on the SFIA property east of Highway 101.
- Loss and/or degradation of wetlands and sensitive species habitats in the project corridor.
- Increase in airborne emissions of NO<sub>x</sub>, ROG, CO, NO<sub>2</sub>, PM<sub>10</sub>, and SO<sub>2</sub>.
- Potential exposure of the public and/or construction workers at the SFIA to hazardous materials.
- Increased energy demand.
- Beneficial effect of expanded regional spending.

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Source: BART West Bay Extension; Ogden, 1996.

## **Are there any Areas of Controversy?**

A number of controversies are associated with the Aerial Design Option LPA which are of significant concern to local communities, groups, or organizations. These areas of controversy highlight critical social and economic implications of the proposed extension, and are indicated below:

### **Colma**

- Extent and duration of construction activities, especially at the cemeteries, because of disturbances to local traffic circulation, noise and dust, and effects to pedestrian safety.

### **South San Francisco**

- Extent and duration of construction activities because of disturbances to local traffic circulation, generation of noise and dust, and effects to pedestrian safety, particularly for school-aged children.

### **San Bruno**

- Extent and duration of construction activities because of disturbances to local traffic circulation, noise and dust, and pedestrian safety, particularly for school-aged children.
- Loss of municipal property tax revenues associated with displacement.

### **Millbrae**

- Extent and duration of construction activities because of disturbances to local traffic circulation, generation of noise and dust, and effects to pedestrian safety, particularly for school-aged children
- Disruption of neighborhoods caused by displacement of businesses and residences.

- Loss of municipal property tax revenues associated with displacement.
- Loss of revenues for the Millbrae School District due to relocation of students.

#### **Burlingame**

- Extent and duration of construction activities because of disturbances to local traffic circulation, generation of noise and dust, and effects to pedestrian safety.
- Traffic impacts along local streets due to BART passengers seeking to access the end-of-the-line station at Millbrae Avenue.

#### **SFIA Property west of Highway 101**

- Loss of wetlands and habitat for the San Francisco garter snake.

#### **CalTrain/BART Service**

- Impacts to the approximately 10 percent of CalTrain patrons who will need to transfer to BART at the Millbrae Avenue Station.

## **Other Alternatives**

### **What Alternatives have been Studied?**

At the outset of the DEIR/SDEIS effort, BART and SamTrans invited the public to participate in a "Public Scoping Meeting." The purpose of the meeting was to solicit ideas about how transit service could be improved in northern San Mateo County and to hear public concerns about potential environmental impacts of the project alternatives. This meeting, held in July 1993, resulted in a menu of 19 alternatives, in addition to the 1992 LPA previously selected by the BART, the SamTrans Boards of Directors, and the MTC. A detailed presentation of these alternatives, which include alignments that had been previously identified and the reasons for rejection of certain alternatives, is contained in the DEIR/Technical Appendix.

BART and SamTrans selected a smaller set of alternatives for further evaluation in the DEIR/SDEIS based on operational, funding, engineering, and environmental considerations. The alternatives studied include the following:

The **No Build Alternative** is essentially a "do-nothing" scenario. The only new transportation improvement anticipated in the project vicinity is the repair of Interstate 280 (I-280) between Highway 101 and 6th Street in San Francisco. This alternative provides a future baseline against which to assess impacts associated with other project alternatives.

The **TSM Alternative** includes a number of transportation improvements that are planned by the Peninsula Commute Service (known as CalTrain, a diesel-operated commuter rail service along the Peninsula), San Mateo County, and local agencies. Key improvements in the project vicinity, in addition to the one assumed under the No Build Alternative, include:

- relocation of the existing San Bruno CalTrain Station to a new site under I-380;
- construction of a new CalTrain station west of Highway 101 across from the entrance to the SFIA;
- construction of an Airport Light Rail System (ALRS) serving the SFIA and the new CalTrain station west of Highway 101;

- increase in CalTrain service from 60 to 86 daily trains; and
- local roadway improvements such as the D Street overpass/on-ramp to I-280 in Colma, the extension of Hickey Boulevard eastward to a new full Highway 101 interchange at Oyster Point Boulevard in South San Francisco, and new turning lanes at the intersections of El Camino Real with Sneath Lane and San Bruno Avenue in San Bruno.

Five basic **BART “build” alternatives** are defined in the DEIR/SDEIS. These alternatives satisfy the project objectives but propose different routes, station locations, and intermodal connections. These alternatives are described in Table S-5 at the end of this summary and are illustrated in Figure S-4.

## How do these Alternatives compare to the Aerial Design Option LPA?

Table S-6 at the end of this summary compares key impacts among the BART “build” alternatives, including the Aerial Design Option LPA.

## How does the Aerial Design Option LPA affect CalTrain?

Although concerns have been expressed that the BART extension would compete with and divert riders from CalTrain, BART and CalTrain serve different markets. They are complementary, not competing, systems. CalTrain is designed to meet the needs of the long-distance commuter, whereas BART provides the most efficient service to patrons traveling shorter distances, which make up the larger group of travelers. MTC predicts that the BART–San Francisco Airport Extension and an increase in CalTrain service from 60 to 86 daily trains would result in increases in CalTrain ridership.

## Next Steps

### Are There any Unresolved Issues?

The following issues must be resolved prior to implementation of the BART–San Francisco Airport Extension:

**Funding Contributions.** The issue of available federal funds must be resolved, as well as the overall BART/SamTrans proposed financing plan. While the project has high local and statewide priority and several key committed funding sources, additional federal and local contributions would need to be secured to construct the proposed extension. BART, SamTrans, and MTC are working closely with FTA and the SFIA to determine appropriate funding for the Aerial Design Option LPA.

**Adoption of Appropriate Mitigation Measures.** The BART and SamTrans boards must adopt specific mitigation measures to reduce or eliminate project impacts.

### What Actions must be taken by the Lead Agencies?

Following distribution of this FEIR/FEIS, the BART and SamTrans Boards of Directors will meet to review the final environmental documents and consider adopting a project for implementation. The boards will consider several actions:

- evaluate the recommended project (the Aerial Design Option LPA) for adoption and implementation;
- certify that the FEIR satisfies the requirements of CEQA, that the FEIR was presented to the BART and SamTrans boards, and that they reviewed and considered the information contained in the FEIR prior to approving the project;
- find that the mitigation measures identified in the FEIR/FEIS will reduce the significant effects to an insignificant level, or that the mitigation measures are infeasible for economic, social, or other considerations;
- find that even though there are significant unavoidable adverse effects because the mitigation measures are insufficient or infeasible, there are social, economic, or other benefits to the proposed project that outweigh, or override, the unavoidable effects;
- find that there are no other feasible alternatives that would reduce significant effects identified for the Aerial Design Option LPA; and
- adopt a Mitigation Monitoring Plan that specifies the manner in which the mitigation measures will be implemented and the method by which implementation will be verified by BART and SamTrans.

On the federal side, FTA will submit the FEIR/FEIS to EPA so that an announcement of the document's availability can be printed in the Federal Register. FTA will not make a decision about the project until 30 days after the notice of availability appears in the Federal Register. FTA will issue its decision in a public "Record of Decision," a statement explaining the agency's action; why the agency selected an alternative other than that which involves the least harm to the environment, if that was the case; and whether all practicable means to avoid or minimize environmental harm have been adopted.

The adoption of a project by BART and SamTrans and the issuance of a Record of Decision by FTA will enable the parties to enter into a "Full Funding Grant Agreement" that will authorize federal funding for the project.

### **When will Construction Begin? When will Service Start?**

Construction of the BART alignment and stations is anticipated to begin in early 1997 and to be completed in early 2000. Revenue service for the BART-San Francisco Airport Extension is scheduled to begin late in the year 2000.



Table S-5  
Summary of BART Build Alternatives <sup>(1)</sup>

Length	1992 LPA	Alternative III Base Case Alternative	Alternative IV Aerial Extension of Highway 101	Alternative V Minimum Length Subway in Millbrae Intermodal	Design Option V-A Minimum Length Subway to Airport CTC	Design Option V-B Minimum Length Subway to San Bruno	Alternative VI Millbrae Ave. via Airport International Terminal	Aerial Design Option LPA
Number of Stations	6.4 miles 3	6.1 miles 3	7.1 miles 4	6.9 miles 3	6.6 miles 3	5.7 miles 2	8.0 miles 4	8.2 miles 4
Station Profile	<ul style="list-style-type: none"> <li>Hickey-subway</li> <li>San Bruno at grade, or</li> <li>Airport Intermodal-at grade</li> </ul>	<ul style="list-style-type: none"> <li>Chemtane-retained cut</li> <li>Airport Long-Term Parking-aerial</li> <li>Millbrae Intermodal-at grade</li> </ul>	<ul style="list-style-type: none"> <li>Hickey-subway</li> <li>Tanforan at grade, or</li> <li>1,380-ft Long-Term Parking-aerial</li> <li>Millbrae Intermodal-at grade</li> </ul>	<ul style="list-style-type: none"> <li>Hickey-subway</li> <li>1,380/San Bruno or Downtown San Bruno-subway</li> <li>Airport Ground Transportation Center-subway or aerial</li> </ul>	<ul style="list-style-type: none"> <li>Hickey-subway</li> <li>1,380/San Bruno or Downtown San Bruno-subway</li> <li>Airport Ground Transportation Center-subway or aerial</li> </ul>	<ul style="list-style-type: none"> <li>Hickey-subway</li> <li>Tanforan-retained cut</li> <li>Airport Intermodal-subway</li> <li>Millbrae Ave.-at grade</li> </ul>	<ul style="list-style-type: none"> <li>Hickey-subway</li> <li>Tanforan-subway</li> <li>Airport Intermodal-aerial</li> <li>Millbrae Ave.-at grade</li> </ul>	<ul style="list-style-type: none"> <li>Hickey-subway</li> <li>Tanforan-subway</li> <li>Airport Intermodal-aerial</li> <li>Millbrae Ave.-at grade</li> </ul>
Parking Spaces	<ul style="list-style-type: none"> <li>Hickey-1,337</li> <li>Tanforan-650</li> <li>1,380 Intermodal-2,325</li> </ul> <i>Total: 4,312</i>	<ul style="list-style-type: none"> <li>Chemtane-1,100</li> <li>Tanforan-650</li> <li>1,380 Intermodal-2,325</li> </ul> <i>Total: 4,075</i>	<ul style="list-style-type: none"> <li>Hickey-1,337</li> <li>Tanforan or 1,380-1,500</li> <li>1,380 Long-Term Parking-100</li> <li>Millbrae Intermodal-1,500</li> </ul> <i>Total: 4,437</i>	<ul style="list-style-type: none"> <li>Hickey-1,337</li> <li>Tanforan-1,300, 1,380 or Downtown San Bruno-1,500</li> <li>Millbrae Intermodal-1,500</li> </ul> <i>Total: 4,137-4,317</i>	<ul style="list-style-type: none"> <li>Hickey-1,337</li> <li>1,380 or Downtown San Bruno-3,000</li> <li>Tanforan-4,317</li> </ul> <i>Total: 4,317</i>	<ul style="list-style-type: none"> <li>Hickey-1,337</li> <li>1,380 or Downtown San Bruno-3,000</li> <li>Tanforan-4,317</li> </ul> <i>Total: 4,317</i>	<ul style="list-style-type: none"> <li>Hickey-1,337</li> <li>Tanforan-1,000</li> <li>Airport Intermodal-400</li> <li>Millbrae Ave.-3,000</li> </ul> <i>Total: 3,537</i>	<ul style="list-style-type: none"> <li>Hickey-1,337</li> <li>Tanforan-1,000</li> <li>Airport Intermodal-400</li> <li>Millbrae Ave.-3,000</li> </ul> <i>Total: 3,537</i>
Intermodal Connections	<ul style="list-style-type: none"> <li>Airport Intermodal-CalTrain/ALRS</li> <li>All Stations-SamTrans</li> </ul>	<ul style="list-style-type: none"> <li>Airport Intermodal-CalTrain/ALRS</li> <li>All Stations-SamTrans</li> </ul>	<ul style="list-style-type: none"> <li>1,380-CalTrain</li> <li>Airport Long-Term Parking-ALRS</li> <li>1,380 Intermodal-ALRS</li> <li>All Stations-SamTrans</li> </ul>	<ul style="list-style-type: none"> <li>1,380 or Downtown San Bruno-CalTrain/ALRS</li> <li>Millbrae-CalTrain/ALRS</li> <li>All Stations-SamTrans</li> </ul>	<ul style="list-style-type: none"> <li>1,380 or Downtown San Bruno-CalTrain/ALRS</li> <li>Millbrae-CalTrain/ALRS</li> <li>All Stations-SamTrans</li> </ul>	<ul style="list-style-type: none"> <li>1,380 or Downtown San Bruno-CalTrain/ALRS</li> <li>Millbrae-CalTrain/ALRS</li> <li>All Stations-SamTrans</li> </ul>	<ul style="list-style-type: none"> <li>Tanforan-CalTrain</li> <li>Millbrae Ave-CalTrain</li> <li>Airport Intermodal-ALRS</li> <li>All Stations-SamTrans</li> </ul>	<ul style="list-style-type: none"> <li>Millbrae Ave-CalTrain</li> <li>Airport Intermodal-ALRS</li> <li>All Stations-SamTrans</li> </ul>
Daily Patronage Volumes (in 1998)	53,100	53,000	54,800	56,100	53,400	53,200	63,000 <sup>(2)</sup>	62,000
Capital Costs <sup>(3)</sup> (BART only, in 1996 \$)	\$1,002,370	\$876,442	\$1,080,325	\$882,221	\$1,151,893	\$803,215	\$1,269,234	\$1,070,000
Capital Costs <sup>(4)</sup> (BART with ALRS, in 1996 \$/yr)	\$1,046,370 <sup>(5)</sup>	\$920,442	\$1,124,325	\$946,221	\$1,195,893	\$847,215	\$1,269,234	\$1,070,000
Operating and Maintenance Costs (year-round, with extension-millions 1996 \$/yr)	\$304.4	\$304.4	\$307.9	\$305.4	\$305.4	\$301.4	\$309.1	\$308.2

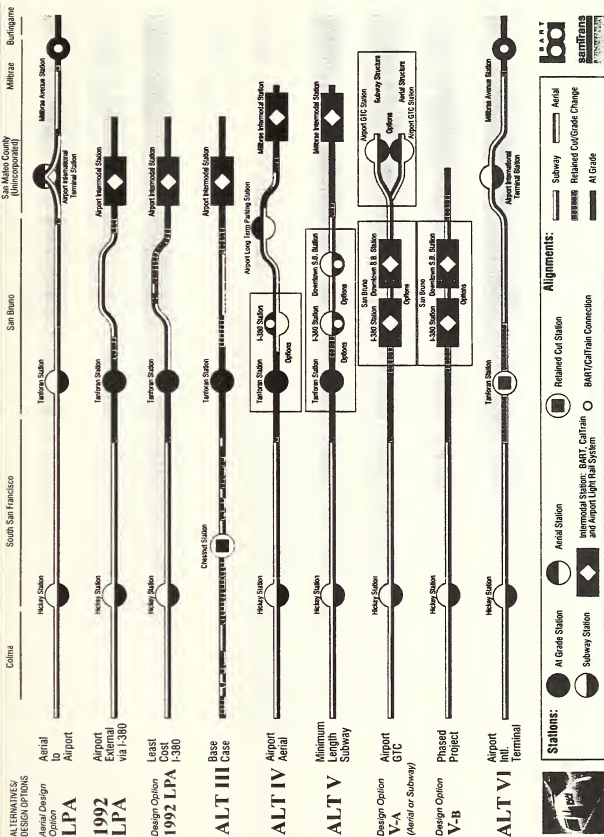
Source: BART West Bay Extension, 1994, 1995, 1996.

- Other alternatives not presented here include the No Build Alternative and the Transportation Systems Management Alternative.
- Costs for the 1,380-ft extension are based on \$8,500 in DEM/ADP/DES.
- These costs exclude:
- Capital cost include \$44,000,000 for an ALRS, which will be covered by others. The ALRS is included in all alternatives, except Alternative VI and the Aerial Design Option LPA.
- With the 1,380 Least-Cost Design Option, which includes the ALRS, capital cost would be \$977,130.

ALRS = Airport Light Rail System



## Comparison of Alignment Alternatives and Design Options



## FIGURE

### Comparison of Alignment Alternatives and Design Options

S-4

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Table S-6  
Comparison of Key Impacts

Issue	Aerial Design Option LPA	1992 Locally Preferred Alternative	I-380 Least-Cost Design Option	Alternative I No Build	Alternative II TSM	Alternative III Base Case	Alternative IV Airport Aerial East of Highway 101	Alternative V Minimum Length Subway to Millbrae	Design Option V-A Minimum Length Subway to Airport GTC	Design Option V-B Minimum Length Subway to San Bruno	Alternative VI Millbrae Ave. via Airport International Terminal
Transit Ridership											
<ul style="list-style-type: none"><li>Increase in Daily BART Regional Ridership (passengers) compared to No Build in 1998</li></ul>	<ul style="list-style-type: none"><li>37,600</li></ul>	<ul style="list-style-type: none"><li>35,800</li></ul>	<ul style="list-style-type: none"><li>35,800</li></ul>	<ul style="list-style-type: none"><li>N/A</li></ul>	<ul style="list-style-type: none"><li>2,100</li></ul>	<ul style="list-style-type: none"><li>36,100</li></ul>	<ul style="list-style-type: none"><li>36,100</li></ul>	<ul style="list-style-type: none"><li>36,500</li></ul>	<ul style="list-style-type: none"><li>35,700</li></ul>	<ul style="list-style-type: none"><li>35,900</li></ul>	<ul style="list-style-type: none"><li>38,400</li></ul>
<ul style="list-style-type: none"><li>Daily BART Patronage in San Mateo County in 1998 (entrances and exits)</li></ul>	<ul style="list-style-type: none"><li>90,000</li></ul>	<ul style="list-style-type: none"><li>80,700</li></ul>	<ul style="list-style-type: none"><li>80,700</li></ul>	<ul style="list-style-type: none"><li>45,500</li></ul>	<ul style="list-style-type: none"><li>41,900</li></ul>	<ul style="list-style-type: none"><li>81,000</li></ul>	<ul style="list-style-type: none"><li>82,800</li></ul>	<ul style="list-style-type: none"><li>84,100</li></ul>	<ul style="list-style-type: none"><li>81,100</li></ul>	<ul style="list-style-type: none"><li>80,900</li></ul>	<ul style="list-style-type: none"><li>91,000 <sup>(1)</sup></li></ul>
Traffic											
<ul style="list-style-type: none"><li>Freeways (compared to 1993 No Build conditions)</li></ul>	<ul style="list-style-type: none"><li>Reduces regional congestion.</li><li><u>Reduces Highway 101 level of service between Millbrae and Broadway and between Broadway and Poplar and between Poplar and Third Avenue in 1998 and 2010.</u></li><li><u>Reduces Highway 101 level of service between SFIA and Millbrae in 2010.</u></li><li>Reduces Highway 101 weaving operations between the northbound loop on-ramp and off-ramp connecting Millbrae Avenue and Highway 101.</li><li>Improves Highway 101 weaving condition between SFIA and Millbrae Avenue.</li></ul>	<ul style="list-style-type: none"><li>Reduces regional congestion.</li><li><u>Reduces Highway 101 level of service between SFIA and Millbrae and between Millbrae and Broadway and between Poplar and Third in 1998 and 2010.</u></li><li><u>Reduces Highway 101 level of service between Broadway and Poplar in 2010.</u></li><li><u>Exacerbates already unacceptable level of service on Highway 101 between Broadway and Poplar Avenue in 1998.</u></li><li>Reduces Highway 101 traffic volumes at weaving section between SFIA and Millbrae Avenue.</li><li><u>Reduces Highway 101 weaving section between San Bruno Avenue and SFIA in 1998 and 2010.</u></li></ul>	<ul style="list-style-type: none"><li>Same as 1992 Locally Preferred Alternative.</li></ul>	<ul style="list-style-type: none"><li><u>Reduces Highway 101 level of service between Millbrae and Broadway and between Poplar and Third Avenues in 1998 and 2010.</u></li><li><u>Reduces Highway 101 level of service between SFIA and Millbrae and between Broadway and Poplar Avenue in 2010.</u></li><li><u>Reduces Highway 101 weaving section between San Bruno Avenue and SFIA and between SFIA and Millbrae Avenue in 1998 and 2010.</u></li></ul>	<ul style="list-style-type: none"><li>Reduces regional congestion.</li><li><u>Reduces Highway 101 level of service between Millbrae and Broadway and between Poplar and Third Avenue in 1998 and 2010.</u></li><li><u>Reduces Highway 101 level of service between Broadway and Poplar in 2010.</u></li><li>Reduces Highway 101 weaving section between SFIA and Millbrae Avenue in 1998 and 2010.</li><li><u>Reduces Highway 101 weaving section between San Bruno and SFIA to unacceptable levels in 2010.</u></li></ul>	<ul style="list-style-type: none"><li>Reduces regional congestion.</li><li><u>Reduces Highway 101 level of service between SFIA and Millbrae and between Millbrae and Broadway and between Poplar and Third in 1998 and 2010.</u></li><li><u>Reduces Highway 101 level of service between Broadway and Poplar in 2010.</u></li><li><u>Exacerbates already unacceptable level of service on Highway 101 between Broadway and Poplar Avenue in 1998.</u></li><li><u>Reduces Highway 101 weaving section between San Bruno and SFIA in 1998 and 2010.</u></li><li>Reduces Highway 101 traffic volumes at weaving section between SFIA and Millbrae Avenue.</li></ul>	<ul style="list-style-type: none"><li>Same as Alternative III <i>except</i> Improves Highway 101 weaving operations between San Bruno and SFIA in 1998.</li><li><u>Reduces Highway weaving section between San Bruno and SFIA in 2010.</u></li></ul>	<ul style="list-style-type: none"><li>Reduces regional congestion.</li><li><u>Reduces Highway 101 level of service between SFIA and Millbrae and between Millbrae and Broadway and between Poplar and Third Avenue and in 1998 and 2010.</u></li><li>Reduces Highway 101 weaving section between SFIA and Millbrae Avenue in 1998 and 2010.</li><li>Improves Highway 101 weaving operations between San Bruno and SFIA in 1998.</li><li><u>Reduces Highway 101 weaving section between San Bruno and SFIA in 2010.</u></li></ul>	<ul style="list-style-type: none"><li>Reduces regional congestion.</li><li><u>Reduces Highway 101 level of service between SFIA and Millbrae and between Millbrae and Broadway in 1998 and 2010.</u></li><li><u>Reduces Highway 101 weaving section between San Bruno Avenue and SFIA in 1998 and 2010.</u></li><li><u>Exacerbates already unacceptable level of service on Highway 101 between Broadway and Poplar and between Poplar and Third Avenue in 1998.</u></li><li>Reduces Highway 101 traffic volumes at weaving section between SFIA and Millbrae Avenue.</li></ul>	<ul style="list-style-type: none"><li>Same as Design Option V-A.</li></ul>	<ul style="list-style-type: none"><li>Reduces regional congestion.</li><li><u>Reduces Highway 101 level of service between Millbrae and Broadway and between Broadway and Poplar and between Poplar and Third Avenue in 1998 and 2010.</u></li><li><u>Reduces Highway 101 level of service between SFIA and Millbrae in 2010.</u></li><li>Improves Highway 101 weaving condition between SFIA and Millbrae Avenue.</li></ul>

Note:  
1) Identified impacts do not affect the environment in all cases. Bold and underlined impacts indicate significant and unavoidable impacts. This figure has been corrected from 88,300 in the DEIR/SDEIS.





Table S-6 (continued)  
Comparison of Key Impacts

Issue	Aerial Design Option LPA	1992 Locally Preferred Alternative	I-380 Least-Cost Design Option	Alternative I No Build	Alternative II TSM	Alternative III Base Case	Alternative IV Airport Aerial East of Highway 101	Alternative V Minimum Length Subway to Millbrae	Design Option V-A Minimum Length Subway to Airport GTC	Design Option V-B Minimum Length Subway to San Bruno	Alternative VI Millbrae Ave. via Airport International Terminal
<b>Traffic (continued)</b>											
<ul style="list-style-type: none"> <li>Local Intersections (Compared to 1993 No Build conditions)</li> </ul>	<ul style="list-style-type: none"> <li>Significant deterioration in LOS at Hickey extension/Hickey Station exit, El Camino Real/Sneath, Sneath/Sears entrance, and <u>El Camino Real/Millbrae Avenue.</u></li> </ul>	<ul style="list-style-type: none"> <li>Significant deterioration in LOS at Hickey extension/station exit in PM, El Camino Real/Sneath in PM, and Chestnut/Grand in PM.</li> </ul>	<ul style="list-style-type: none"> <li>Same as 1992 Locally Preferred Alternative.</li> </ul>	<ul style="list-style-type: none"> <li><b>Significant deterioration in LOS at <u>Chestnut/Grand, El Camino Real/Westborough, El Camino Real/Sneath, and California/Broadway.</u></b></li> <li><b>Exacerbates already unacceptable LOS at <u>Junipero Serra/Westborough, El Camino Real/Noor, and 2nd/San Bruno.</u></b></li> </ul>	<ul style="list-style-type: none"> <li>Generally same or improved LOS at local intersections</li> </ul>	<ul style="list-style-type: none"> <li>Significant deterioration in LOS at El Camino Real/Sneath.</li> <li><b>Exacerbates already unacceptable levels of service at <u>Junipero Serra/Westborough.</u></b></li> </ul>	<ul style="list-style-type: none"> <li>Significant deterioration in LOS at the Hickey extension/station exit in PM, Chestnut/Grand in PM and San Mateo/Huntington and San Anselmo/Center in PM.</li> <li>If Tanforan Station option were selected, reduced LOS at El Camino Real/Sneath.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative IV <i>plus</i></li> <li>For the Downtown San Bruno Station option, impacts would be the same as those identified for the I-380/San Bruno Station except that San Mateo/Angus would also be significantly affected.</li> </ul>	<ul style="list-style-type: none"> <li>Significant deterioration in LOS at San Mateo/Huntington in PM, San Mateo/Lumber Yard Kiss-and-Ride exit in PM, the Hickey extension/station exit and Chestnut/Grand, in PM.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Design Option V-A.</li> </ul>	<ul style="list-style-type: none"> <li>Significant deterioration in LOS at Hickey extension/station exit and Chestnut/Grand in PM, El Camino Real/Sneath, <u>Huntington/Tanforan Driveway North in PM, and El Camino Real/Millbrae in AM.</u></li> </ul>
<ul style="list-style-type: none"> <li>Parking in 2010</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in parking demand at Daly City and Colma Stations.</li> <li>BART users may park at Tanforan Park Shopping Center rather than the Tanforan Station.</li> <li>SFIA passengers may park at the Hickey, Tanforan, or Millbrae Avenue Stations to access the SFIA.</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in parking demand of Daly City and Colma Stations.</li> <li>Demand exceeds design at Daly City and Tanforan Stations.</li> <li>SFIA air passengers may park at the Airport Intermodal Station to access ALRS.</li> </ul>	<ul style="list-style-type: none"> <li>Same as 1992 Locally Preferred Alternative.</li> </ul>	<ul style="list-style-type: none"> <li>Demand exceeds design at Daly City and Colma Stations.</li> </ul>	<ul style="list-style-type: none"> <li>Same as No Build Alternative.</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in parking demand at Daly City and Colma Stations.</li> <li>Demand exceeds design at Daly City, Chestnut, and Tanforan Stations.</li> <li>SFIA air passengers may park at the Airport Intermodal Station to access ALRS.</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in parking demand at Daly City and Colma Stations.</li> <li>Demand exceeds design at Daly City Station.</li> <li>SFIA air passengers may park at the Millbrae Intermodal Station to access ALRS.</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in parking demand at Daly City and Colma Stations.</li> <li>Demand exceeds design at Daly City and Millbrae Intermodal Stations.</li> <li>Spillover parking into neighborhood at Millbrae Intermodal Station.</li> <li>SFIA air passengers may park at the Millbrae Intermodal Station to access ALRS.</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in parking demand at Daly City and Colma Stations.</li> <li>Demand exceeds design at Daly City Station.</li> <li>SFIA air passengers may park at I-380/San Bruno or Downtown San Bruno Stations to access ALRS.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Design Option V-A.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Design Option V-A.</li> </ul>
<b>Land Use</b>											
<ul style="list-style-type: none"> <li>General Plan Consistency</li> </ul>	<ul style="list-style-type: none"> <li>Generally consistent with Colma, South San Francisco, and San Bruno general plans, and with Millbrae's Station Area Concept Plan; conflicts with Millbrae general plan.</li> </ul>	<ul style="list-style-type: none"> <li>Generally consistent with Colma, South San Francisco and San Bruno Plans.</li> </ul>	<ul style="list-style-type: none"> <li>Generally consistent with Colma, South San Francisco Plans but conflicts and San Bruno Plans.</li> </ul>	<ul style="list-style-type: none"> <li>No effect.</li> </ul>	<ul style="list-style-type: none"> <li>No effect.</li> </ul>	<ul style="list-style-type: none"> <li>Conflicts with Colma, South San Francisco, and San Bruno Plans.</li> </ul>	<ul style="list-style-type: none"> <li>Generally consistent with Colma Plan but conflicts with San Bruno and Millbrae Plans.</li> </ul>	<ul style="list-style-type: none"> <li>Generally consistent with Colma, South San Francisco Plans but conflicts with San Bruno and Millbrae Plans.</li> </ul>	<ul style="list-style-type: none"> <li>Generally consistent with Colma, South San Francisco Plans but conflicts with San Bruno Plan.</li> </ul>	<ul style="list-style-type: none"> <li>Generally consistent with Colma, South San Francisco Plans but conflicts with San Bruno Plan.</li> </ul>	<ul style="list-style-type: none"> <li>Generally consistent with San Bruno Plan but conflicts with Millbrae Plan.</li> </ul>
<ul style="list-style-type: none"> <li>Displacement</li> </ul>	<ul style="list-style-type: none"> <li><u>Up to 525 residents; up to 55 employees.</u></li> </ul>	<ul style="list-style-type: none"> <li><u>120 residents; up to 130 employees.</u></li> </ul>	<ul style="list-style-type: none"> <li><u>Same as 1992 Locally Preferred Alternative.</u></li> </ul>	<ul style="list-style-type: none"> <li>No displacement.</li> </ul>	<ul style="list-style-type: none"> <li>No or little displacement.</li> </ul>	<ul style="list-style-type: none"> <li><u>No residential displacement; up to 40 employees.</u></li> </ul>	<ul style="list-style-type: none"> <li><u>Up to 560 residents; up to 490 employees.</u></li> </ul>	<ul style="list-style-type: none"> <li><u>Up to 600 residents; up to 605 employees.</u></li> </ul>	<ul style="list-style-type: none"> <li><u>Up to 650 residents; up to 565 employees.</u></li> </ul>	<ul style="list-style-type: none"> <li><u>Same as Design Option V-A.</u></li> </ul>	<ul style="list-style-type: none"> <li><u>Up to 525 residents; up to 60 employees.</u></li> </ul>

Note: Identified impacts do not affect the environment in all cases. Bold and underlined impacts indicate significant and unavoidable impacts.



Table S-6 (continued)  
Comparison of Key Impacts

Issue	Aerial Design Option LPA	1992 Locally Preferred Alternative	I-380 Least-Cost Design Option	Alternative I No Build	Alternative II TSM	Alternative III Base Case	Alternative IV Airport Aerial East of Highway 101	Alternative V Minimum Length Subway to Millbrae	Design Option V-A Minimum Length Subway to Airport GTC	Design Option V-B Minimum Length Subway to San Bruno	Alternative VI Millbrae Ave. via Airport International Terminal
<b>Land Use (continued)</b>											
• Community Cohesion/Local Economic Activity in Station Vicinity	<ul style="list-style-type: none"> <li>• <b><u>Disrupts local social patterns of shopping, circulation, and neighborhood activities because of displacement.</u></b></li> <li>• <b><u>Loss of municipal and school tax revenues in Millbrae.</u></b></li> <li>• <b><u>Requires relocation of Millbrae Gardens.</u></b></li> <li>• <b><u>Affects minority and lower income populations of Millbrae.</u></b></li> </ul>	<ul style="list-style-type: none"> <li>• Minimally affects real estate or economic development <i>except</i></li> <li>• At Hickey where it supports local development objectives.</li> <li>• <b><u>Disrupts local social patterns of shopping, circulation, and neighborhood activities because of displacement.</u></b></li> <li>• Displacement of Tanforan Shopping Center overflow parking for Tanforan Station may affect economic development.</li> </ul>	• Same as 1992 Locally Preferred Alternative.	• No effect.	• Minimally affects real estate at the CalTrain/Airport Light Rail Station.	<ul style="list-style-type: none"> <li>• Conflicts with residential development objectives in South San Francisco.</li> <li>• Displacement of Tanforan Shopping Center overflow parking for Tanforan Station may affect economic development.</li> <li>• Chestnut Station displaces 18-stall golf driving range and bar/cafe.</li> <li>• Displaces businesses around Chestnut Station.</li> </ul>	<ul style="list-style-type: none"> <li>• <b><u>Disrupts local social patterns of shopping, circulation, and neighborhood activities due to displacement.</u></b></li> <li>• Displacement of Tanforan Shopping Center overflow parking for Tanforan Station may affect economic development.</li> <li>• <b><u>Loss of municipal and school tax revenues in San Bruno with I-380 Station option.</u></b></li> <li>• <b><u>Economic / isolation impacts in Millbrae.</u></b></li> <li>• <b><u>Loss of the Millbrae Nursery School and Marino Vista Park.</u></b></li> </ul>	<ul style="list-style-type: none"> <li>• <b><u>Disrupts local social patterns of shopping, circulation, and neighborhood activities due to displacement.</u></b></li> <li>• Displacement of Tanforan Shopping Center overflow parking for Tanforan Station may affect economic development.</li> <li>• <b><u>Loss of municipal and school tax revenues in San Bruno, with either I-380 or Downtown San Bruno Station.</u></b></li> <li>• <b><u>Disrupts the San Bruno Central Business District.</u></b></li> <li>• <b><u>I-380/ San Bruno Station affects Belle Air and San Bruno Park neighborhoods.</u></b></li> <li>• <b><u>Loss of Poy Park with Downtown San Bruno Station.</u></b></li> <li>• <b><u>Economic / isolation effects in Millbrae.</u></b></li> <li>• <b><u>Loss of the Millbrae Nursery School and Marino Vista Park.</u></b></li> </ul>	<ul style="list-style-type: none"> <li>• Same as <b><u>Alternative V</u></b> <i>except</i></li> <li>• <b><u>Impact in San Bruno would be greater due to larger station; ALRS would further fragment Belle Air neighborhood</u></b> <i>plus</i></li> <li>• There would be no impacts at the Tanforan or Millbrae Intermodal Stations.</li> </ul>	• Same as <b><u>Design Option V-A</u></b>	<ul style="list-style-type: none"> <li>• <b><u>Disrupts local social patterns of shopping, circulation, and neighborhood activities due to displacement.</u></b></li> <li>• <b><u>Loss of municipal and school tax revenues in San Bruno and Millbrae.</u></b></li> <li>• <b><u>Requires relocation of Millbrae Gardens.</u></b></li> <li>• <b><u>Would affect minority and lower income populations of Millbrae.</u></b></li> </ul>
• Community Cohesion/Social Considerations (Not in Station Vicinity but along Alignment)	• Reduces supply of low-cost housing in Millbrae and San Mateo County.	<ul style="list-style-type: none"> <li>• <b><u>Fragments Fifth Addition.</u></b></li> <li>• <b><u>Impacts Belle Air neighborhood.</u></b></li> <li>• Reduces supply of low-cost housing in San Bruno and San Mateo County.</li> </ul>	<ul style="list-style-type: none"> <li>• <b><u>Fragments Fifth Addition more than proposed project because of aerial configuration.</u></b></li> <li>• <b><u>Impacts Belle Air Elementary School and 7th and Walnut Park.</u></b></li> </ul>	• No neighborhood impacts.	<ul style="list-style-type: none"> <li>• No BART-related neighborhood impacts.</li> <li>• Increased activity along CalTrain right-of-way would impact South San Francisco, San Bruno, and Millbrae, and along the Hickey Boulevard extension in South San Francisco.</li> </ul>	<ul style="list-style-type: none"> <li>• <b><u>Introduces land use incompatibility with cemeteries in Colma.</u></b></li> <li>• <b><u>Introduces physical barrier in South San Francisco and San Bruno.</u></b></li> <li>• Displaces approximately 400 spaces of municipal, private, and CalTrain parking.</li> </ul>	<ul style="list-style-type: none"> <li>• <b><u>Introduces physical barrier in Belle Air neighborhood.</u></b></li> <li>• <b><u>Impacts Belle Air neighborhood in San Bruno and Marino Vista and North Millbrae neighborhoods in Millbrae.</u></b></li> <li>• Reduces supply of low-cost housing in San Bruno and San Mateo County.</li> </ul>	<ul style="list-style-type: none"> <li>• <b><u>Impacts Belle Air neighborhood in San Bruno and Marino Vista and North Millbrae neighborhoods in Millbrae.</u></b></li> <li>• Reduces supply of low-cost housing in San Bruno and San Mateo County.</li> </ul>	• Same as Alternative V.	• Same as Alternative V.	<ul style="list-style-type: none"> <li>• <b><u>Impacts Fifth Addition neighborhood in San Bruno.</u></b></li> <li>• Reduces supply of low-cost housing in Millbrae and San Mateo County.</li> </ul>
• Regional Economic Activity	• Creates 675 to 1,125 direct/indirect jobs.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Creates few jobs.	• Creates fewer jobs than Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.

Note: Identified impacts do not affect the environment in all cases. Bold and underlined impacts indicate significant and unavoidable impacts.





Table S-6 (continued)  
Comparison of Key Impacts

Issue	Aerial Design Option LPA	1992 Locally Preferred Alternative	I-380 Least-Cost Design Option	Alternative I No Build	Alternative II TSM	Alternative III Base Case	Alternative IV Airport Aerial East of Highway 101	Alternative V Minimum Length Subway to Millbrae	Design Option V-A Minimum Length Subway to Airport GTC	Design Option V-B Minimum Length Subway to San Bruno	Alternative VI Millbrae Ave. via Airport International Terminal
Visual Quality Built Environment	<ul style="list-style-type: none"> <li>BART facilities introduce scale incompatibilities in Millbrae.</li> </ul>	<ul style="list-style-type: none"> <li>ALRS and Highway 101 connections introduce scale incompatibilities in Millbrae.</li> </ul>	<ul style="list-style-type: none"> <li>Same as 1992 Locally Preferred Alternative.</li> <li>Scale incompatibilities would occur in Fifth Addition neighborhood in San Bruno.</li> </ul>	<ul style="list-style-type: none"> <li>No effect.</li> </ul>	<ul style="list-style-type: none"> <li>Same as 1992 Locally Preferred Alternative.</li> </ul>	<ul style="list-style-type: none"> <li>Same as 1992 Locally Preferred Alternative.</li> <li>Aerial BART alignment introduces scale incompatibilities in San Bruno.</li> </ul>	<ul style="list-style-type: none"> <li>Same as 1992 Locally Preferred Alternative.</li> <li>Aerial BART alignment and station options introduce scale incompatibilities in the Belle Air neighborhood of San Bruno.</li> <li>Millbrae Intermodal Station, ALRS, and Highway 101 connections introduce scale incompatibilities in Marino Vista and North Millbrae neighborhoods in Millbrae.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative IV.</li> <li>BART parking structure introduces scale incompatibilities with homes on east side of 3rd Avenue in San Bruno.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative V.</li> <li>No effects in Millbrae.</li> <li>BART parking structure introduces scale incompatibilities with homes on east side of 3rd Avenue in San Bruno.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Design Option V-A.</li> </ul>	<ul style="list-style-type: none"> <li>BART facilities introduce scale incompatibilities in Millbrae.</li> <li>Tanforan Station would introduce scale incompatibilities in San Bruno.</li> </ul>
Scenic Resources and Significant Views	<ul style="list-style-type: none"> <li>Temporary removal of mature trees within Colma and South San Francisco.</li> <li>Aerial guideways across SFIA property west of Highway 101 contrasts with undeveloped, natural setting and obstructs views of San Bruno Mountain from Madrone and Center Streets in the Marino Vista neighborhood.</li> </ul>	<ul style="list-style-type: none"> <li>Temporary removal of mature trees within Colma and South San Francisco.</li> <li>Storage tracks and car wash affect views and scenic resources in Millbrae.</li> <li>ALRS and Highway 101 ramps obstruct views of San Bruno Mountain and diminish appeal of SFIA open space area west of Highway 101.</li> </ul>	<ul style="list-style-type: none"> <li>Same as 1992 Locally Preferred Alternative.</li> </ul>	<ul style="list-style-type: none"> <li>No effect.</li> </ul>	<ul style="list-style-type: none"> <li>ALRS and Highway 101 ramp obstruct view of San Bruno Mountain from Millbrae and diminish appeal of SFIA open space area west of Highway 101.</li> </ul>	<ul style="list-style-type: none"> <li>Same as 1992 Locally Preferred Alternative.</li> <li>Permanent removal of trees in Colma cemeteries.</li> </ul>	<ul style="list-style-type: none"> <li>Same as 1992 Locally Preferred Alternative.</li> <li>Aerial configuration and Millbrae Intermodal Station significantly affects view of San Bruno Mountain.</li> <li>No effect from storage tracks or car wash.</li> </ul>	<ul style="list-style-type: none"> <li>Same as 1992 Locally Preferred Alternative but greater effect on views of San Bruno Mountain because of Millbrae Intermodal Station.</li> <li>No effect from storage tracks or car wash.</li> </ul>	<ul style="list-style-type: none"> <li>Same as 1992 Locally Preferred Alternative.</li> <li>No effects in Millbrae.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Design Option V-A.</li> </ul>	<ul style="list-style-type: none"> <li>Temporary removal of mature trees within Colma and South San Francisco.</li> </ul>
Sensitive Receptors	<ul style="list-style-type: none"> <li>Daly City Shop/Yard sound wall creates perception of encroachment for Meadowbrook Trailer Park residents.</li> <li>Light and glare effects from parking area lights.</li> </ul>	<ul style="list-style-type: none"> <li>Daly City Shop/Yard sound wall creates perception of encroachment for Meadowbrook Trailer Park residents.</li> <li>Tanforan Station facilities and alignment may create a sense of encroachment for San Bruno residents.</li> </ul>	<ul style="list-style-type: none"> <li>Same as 1992 Locally Preferred Alternative.</li> <li>I-380 aerial segment creates encroachment for homes in San Bruno's Fifth Addition neighborhood.</li> </ul>	<ul style="list-style-type: none"> <li>No effect.</li> </ul>	<ul style="list-style-type: none"> <li>No effect.</li> </ul>	<ul style="list-style-type: none"> <li>Same as 1992 Locally Preferred Alternative.</li> <li>Retained cut effects cemeteries in Colma and residents in South San Francisco.</li> <li>The Chestnut Station parking structure would introduce light and glare into South San Francisco.</li> <li>Ancillary facilities, a retaining wall, and fencing create a sense of encroachment in South San Francisco.</li> </ul>	<ul style="list-style-type: none"> <li>Same as 1992 Locally Preferred Alternative.</li> <li>Encroachment effects by San Bruno Station options and Millbrae Intermodal Station.</li> <li>The I-380/San Bruno Station would introduce light and glare in San Bruno.</li> <li>BART storage tailtrack would extend to within 60 feet of sensitive receptors in Millbrae.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative IV</li> <li>Light and glare effects at Downtown San Bruno Station instead of I-380 Station.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative V</li> <li>No effects in Millbrae.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Design Option V-A.</li> </ul>	<ul style="list-style-type: none"> <li>Same as 1992 Aerial Design Option LPA</li> </ul>

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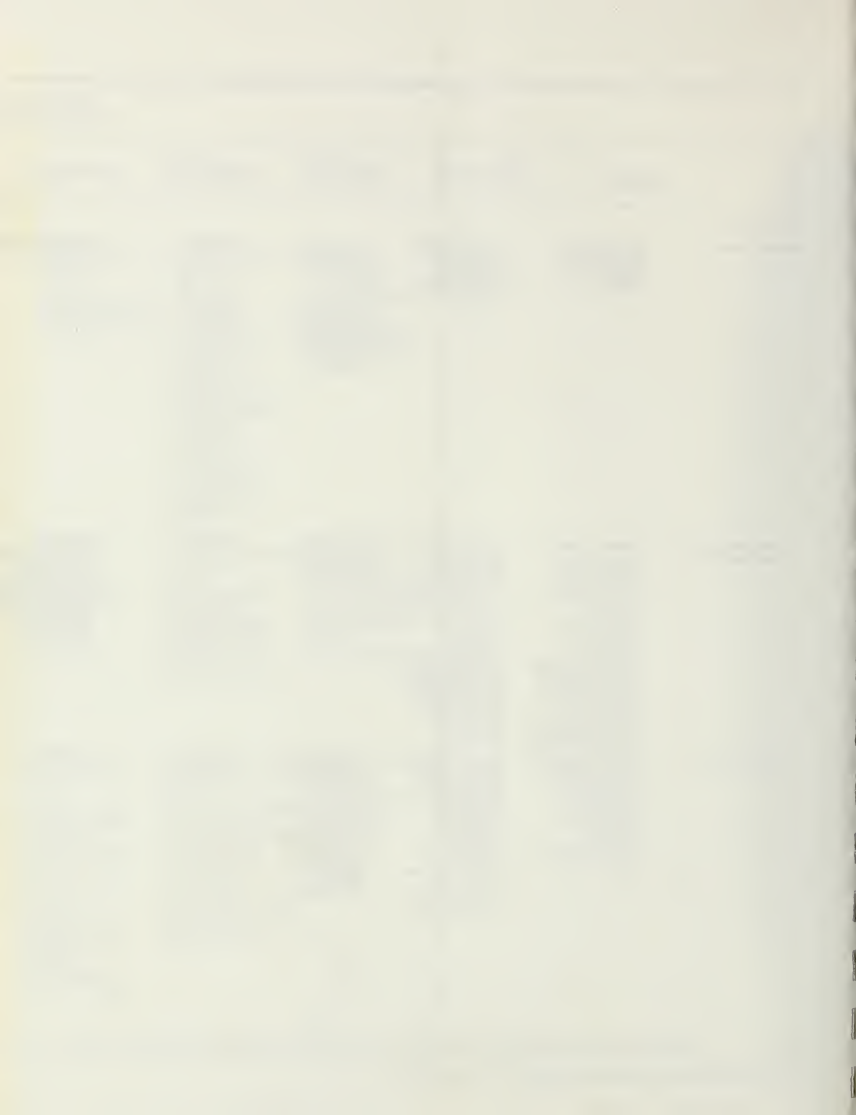


Table S-6 (continued)  
Comparison of Key Impacts

Issue	Aerial Design Option LPA	1992 Locally Preferred Alternative	I-380 Least-Cost Design Option	Alternative I No Build	Alternative II TSM	Alternative III Base Case	Alternative IV Airport Aerial East of Highway 101	Alternative V Minimum Length Subway to Millbrae	Design Option V-A Minimum Length Subway to Airport GTC	Design Option V-B Minimum Length Subway to San Bruno	Alternative VI Millbrae Ave. via Airport International Terminal
<b>Visual Quality (continued)</b>											
• Streetscape	• Hickey Station potentially enhances streetscape in South San Francisco.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• No effect.	• No effect.	• <u>Alters streetscape in San Bruno in vicinity of aerial segment and station.</u>	• Same as Aerial Design Option LPA. <i>plus</i> • <u>Alters streetscape in San Bruno in vicinity of aerial segment and station.</u>	• Same as proposed project <i>plus</i> • Alters streetscape in San Bruno with I-380/San Bruno and Downtown San Bruno Station options.	• Same as Alternative V.	• Same as Design Option V.	• Same as Aerial Design Option LPA. <i>plus</i> • Alters streetscape in San Bruno at Tanforan Station.
<b>Cultural Resources</b>											
• Direct Physical Disturbance	• Direct effects to arched, cut-stone bridge in South San Francisco.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• No effect.	• No effect.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA. <i>plus</i> • Relocation of the Millbrae Train Station, a structure on the National Register of Historic Places.
• Diminution of Historic Setting	• No effect.	• No effect.	• No effect.	• No effect.	• No effect.	• No effect.	• No effect.	• Indirect effects to potentially historic downtown San Bruno properties.	• Same as Alternative V.	• Same as Alternative V.	• No effect.
<b>Community Services</b>											
	• <u>Increases demand for local emergency response.</u> • Minimal increase in water demand and wastewater treatment requirements.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Emergency response vehicles would still be delayed by train passbys in San Bruno and Millbrae.	• Negligible change in service demands.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA with slightly greater demand due to one additional station.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• No effect.
<b>Geology</b>											
• Seismic Effects	• Exposes BART facilities including the aerial wye-stub to potentially strong, seismically induced groundshaking and lateral pressures. • Potentially strong, seismically induced groundshaking on facilities proposed on the SFIA property east of Highway 101.	• Exposes BART facilities to potentially strong, seismically-induced groundshaking and lateral pressures. • Potential for seismically-induced strain on I-380 tunnel lining.	• Same as 1992 Locally Preferred Alternative.	• No effect.	• Exposes roadway and transit improvement to potentially strong seismically-induced groundshaking.	• Same as 1992 Locally Preferred Alternative excluding seismic strain on tunnel.	• Exposes BART facilities to potentially strong, seismically-induced groundshaking and lateral pressures <i>plus</i> • Potential for seismically-induced strain on tunnel under Highway 101. • Potentially strong, seismically-induced groundshaking on facilities proposed on the SFIA property east of Highway 101.	• Same as 1992 Locally Preferred Alternative excluding seismic strain on tunnel.	• Same as Alternative IV.	• Same as 1992 Locally Preferred Alternative	• Same as Alternative IV. <i>plus</i> • Potential for seismically-induced strain with Tunnel Construction Option.
• Liquefaction/ Bay Mud Effects	• Exposes BART facilities overlying San Francisco Bay Mud to seismically-induced, localized liquefaction and settlement.	• Exposes BART facilities, ALRS, and highway on and off-ramps overlying San Francisco Bay Mud to seismically-induced, localized liquefaction and settlement.	• Same as 1992 Locally Preferred Alternative.	• No effect.	• Exposes roadway and transit improvement to seismically-induced, localized liquefaction and settlement.	• Same as 1992 Locally Preferred Alternative.	• Same as 1992 Locally Preferred Alternative.	• Same as 1992 Locally Preferred Alternative.	• Same as 1992 Locally Preferred Alternative.	• Same as Design Option V-A.	• Same as Design Option V-A.

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**Table S-6 (continued)**  
**Comparison of Key Impacts**

Issue	Aerial Design Option LPA	1992 Locally Preferred Alternative	I-380 Least-Cost Design Option	Alternative I No Build	Alternative II TSM	Alternative III Base Case	Alternative IV Airport Aerial East of Highway 101	Alternative V Minimum Length Subway to Millbrae	Design Option V-A Minimum Length Subway to Airport GTC	Design Option V-B Minimum Length Subway to San Bruno	Alternative VI Millbrae Ave. via Airport International Terminal
<b>Geology (continued)</b>											
• Hydrostatic and Settlement Effects	• Exposes BART facilities below groundwater level to seismically-induced upward force. • Facilities involving spread footings would be susceptible to long-term ground settlement.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• No effect.	• Spread footings susceptible to long-term settlement.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.
• Corrosive Subsurface Soils	• Potentially exposes underground structures to corrosive subsurface soils.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• No effect.	• No effect.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.
<b>Biological Resources</b>											
• Total Permanent Wetland Loss (approximate acreage of wetlands and creek channels)	• 1.021	• 2.42	• 2.62	• No effect.	• 1.09	• 1.82	• 1.80	• 1.26	• 1.27 to 1.28	• 1.12	• 0.87
• Permanent Loss of Wetland Habitats inhabited by the San Francisco Garter Snake, California Red-legged frog, and the San Francisco Forktail Damselfly	• 0.501 acres of wetland habitat.	• 1.52 acres of wetland habitats and obstruction of movement corridors within sensitive wildlife species habitat.	• 1.54 acres of wetland habitats.	• Results in continued decline of San Francisco Garter Snake and Red-legged frog habitat.	• 0.93 acres of wetland habitats.	• 1.16 acres of wetland habitat.	• 0.91 acres of wetland habitat.	• 0.37 acres of wetland habitat.	• 0.40 to 0.41 acres of wetland habitat.	• 0.25 acres of wetland habitat.	• No displacement of wetlands habitats, resulting in the least impact of all alternatives.
• Reduction in aquatic habitat value	• Additional drainage outfalls into existing waterways could convey runoff and pollutants into aquatic habitats.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• No effect.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.
<b>Hydrology and Water Quality</b>											
• Flood Hazard	• Encroaches into the 100-year floodplain in Colma, South San Francisco, and on the west of Bayshore parcel, and may increase risk of flooding in adjacent areas. • Reconstruction of a stretch of Colma Creek in South San Francisco would improve the discharge of stormwaters.	• Encroaches into the 100-year floodplain in Colma, South San Francisco, San Bruno and on west of Bayshore parcel, and may increase risk of flooding in adjacent areas. • Reconstruction of a stretch of Colma Creek in South San Francisco would improve the discharge of stormwaters.	• Same as 1992 Locally Preferred Alternative, <i>except</i> • Retained cut segment in west of Bayshore parcel would disrupt drainage and increase flood hazards in this area.	• No flood control improvements to Colma Creek would be made.	• Same as Aerial Design Option LPA, <i>except</i> • No encroachment in Colma.	• Placement of a station in the 100-year floodplain of Colma Creek at Chestnut Boulevard, and encroaches into the 100-year floodplain on west of Bayshore parcel.	• Similar to Aerial Design Option LPA but I-380/San Bruno Station option would encroach upon flood prone area in San Bruno.	• Similar to Aerial Design Option LPA, <i>except</i> • Encroaches into known flood prone areas in San Bruno. • Less encroachment on the west of Bayshore parcel.	• Same as Aerial Design Option LPA, <i>except</i> • Less encroachment on the west of Bayshore parcel.	• Same as Aerial Design Option LPA, <i>except</i> • No encroachment on west of Bayshore parcel.	• Similar to Aerial Design Option LPA.
• Soil Erosion	• Results in significant erosion at the outlets of new and modified drainageways but San Felipe-South Lomita Canal and existing culverts would be unaffected.	• Results in significant erosion at the outlets of new and modified drainageways.	• Same as 1992 Locally Preferred Alternative.	• No effect.	• Results in less erosion than the 1992 Locally Preferred Alternative; avoids Cupid Row Canal.	• Same as 1992 Locally Preferred Alternative.	• Same as 1992 Locally Preferred Alternative.	• Same as 1992 Locally Preferred Alternative.	• Same as 1992 Locally Preferred Alternative.	• Same as 1992 Locally Preferred Alternative.	• Same as Aerial Design Option LPA.

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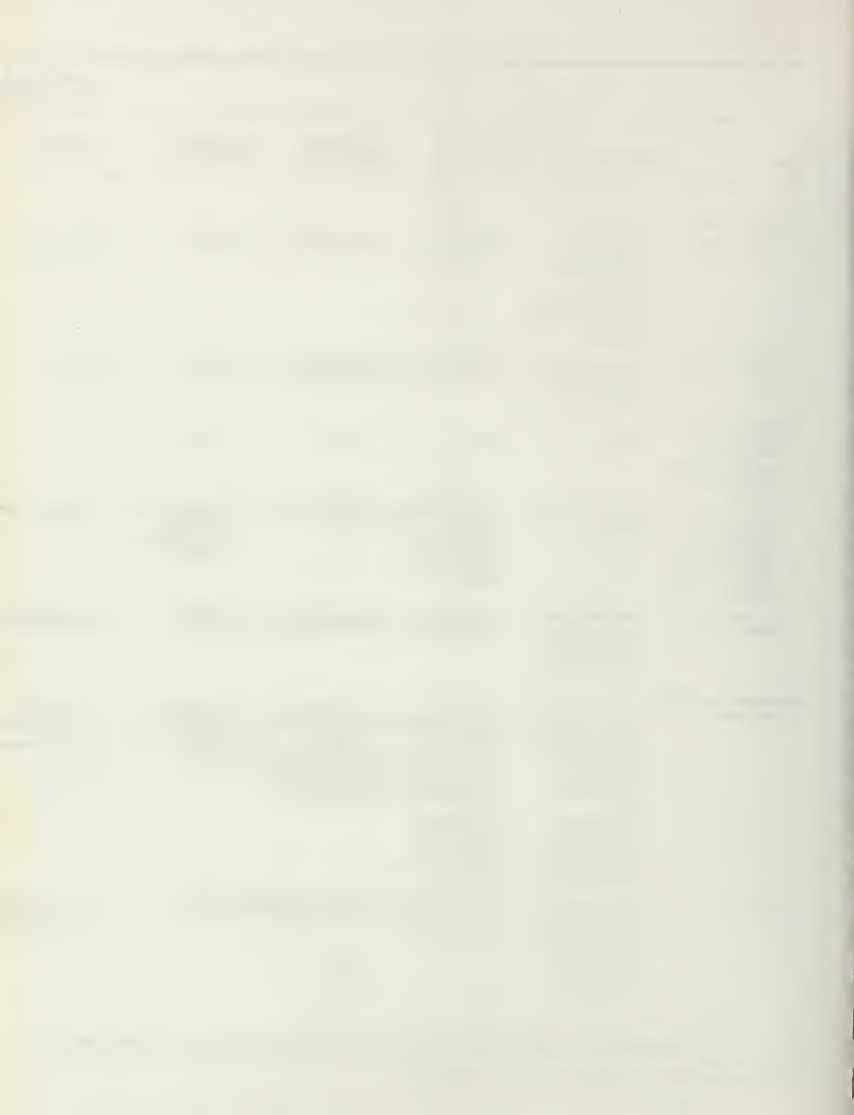


Table S-6 (continued)  
Comparison of Key Impacts

Issue	Aerial Design Option LPA	1992 Locally Preferred Alternative	1-380 Least-Cost Design Option	Alternative I No Build	Alternative II TSM	Alternative III Base Case	Alternative IV Airport Aerial East of Highway 101	Alternative V Minimum Length Subway to Millbrae	Design Option V-A Minimum Length Subway to Airport GTC	Design Option V-B Minimum Length Subway to San Bruno	Alternative VI Millbrae Ave. via Airport International Terminal
<b>Hydrology and Water Quality (continued)</b>											
• Water Quality	• Results in increased runoff volumes (20 cfs) and greater pollutant loadings.	• Results in increased runoff volumes (50 cfs) and greater pollutant loadings than the Aerial Design Option LPA.	• Same as 1992 Locally Preferred Alternative.	• No effect.	• Results in greater runoff volumes (32 cfs) and pollutant loading than the Aerial Design Option LPA.	• Same as 1992 Locally Preferred Alternative.	• Results in greater runoff volumes (34-39 cfs) and pollutant loading than the 1992 Locally Preferred Alternative.	• Results in similar runoff volumes (34-44 cfs) and pollutant loading than the 1992 Locally Preferred Alternative.	• Results in similar runoff volumes (18-23 cfs) and pollutant loading than the 1992 Locally Preferred Alternative.	• Same as Design Option V-A.	• Same as Aerial Design Option LPA.
• Groundwater	• Potentially contaminates underlying aquifer.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• No effect.	• No effect.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.
Noise (maximum estimate of sensitive receptors) <sup>(2)</sup>											
• Groundborne Noise	• 73	• 121	• 77	• No effect.	• Not Applicable.	• Not Applicable.	• 77	• 77	• 104	• 99	• 113
• Airborne Noise	• 72	• 119	• 216	• No effect.	• 118	• 354	• 267	• 268	• 193	• 170	• 84
• Vibration	• 168	• 162	• 156	• No effect.	• Not Applicable.	• 136	• 195	• 180	• 195	• 196	• 201
• Site-specific Unavoidable Impacts	• None.	• None	• None	• None	• None	• None	• None	• None	• None	• None	• <u>Seven to eight homes in Millbrae would experience groundborne noise.</u>
<b>Air Quality</b>											
• Reductions in emissions from 1993 No Build by 1998 (000 tons/yr): Carbon Monoxide Nitrogen Oxides Reactive Organic Gases PM <sub>10</sub>	• 318.9 • 13.8 • 20.6 • 1.5	• Similar to Aerial Design Option LPA.	• Similar to Aerial Design Option LPA.	• Worsens regional air quality compared to all BART build alternatives.	• Similar to Aerial Design Option LPA.	• Similar to Aerial Design Option LPA.	• Similar to Aerial Design Option LPA.	• Similar to Aerial Design Option LPA.	• Similar to Aerial Design Option LPA.	• Similar to Aerial Design Option LPA.	• Similar to Aerial Design Option LPA.
• Highest Modeled 8-Hr. Net CO Concentration in 1998	• 6.5	• 7.0	• 7.0	• 7.5	• 8.4	• 6.3	• 7.3	• 7.3	• Similar to Alternative V	• 7.1	• 6.5
• Conformity Assessment	• In conformance with the MTC Resolution No. 2270 and Clean Air Act.	• Same as Aerial Design LPA.	• Same as Aerial Design LPA.	• No effect.	• Same as Aerial Design LPA.	• Same as Aerial Design LPA.	• Same as Aerial Design LPA.	• Same as Aerial Design LPA.	• Same as Aerial Design LPA.	• Same as Aerial Design LPA.	• Same as Aerial Design LPA.
<b>Public Health and Safety</b>											
• Exposure to Hazardous Materials	• Introduces minimal volumes of hazardous materials for maintenance of facilities and equipment. • Low likelihood of exposure to known nearby contaminated sites.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• No effect.	• No effect.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.

Note:  
(2) Identified impacts do not affect the environment in all cases. Bold and underlined impacts indicate significant and unavoidable impacts. Figures have been corrected to reflect the DEIR/SDEIS text.





Table S-6 (continued)  
Comparison of Key Impacts

Issue	Aerial Design Option LPA	1992 Locally Preferred Alternative	I-380 Least-Cost Design Option	Alternative I No Build	Alternative II TSM	Alternative III Base Case	Alternative IV Airport Aerial East of Highway 101	Alternative V Minimum Length Subway to Millbrae	Design Option V-A Minimum Length Subway to Airport GTC	Design Option V-B Minimum Length Subway to San Bruno	Alternative VI Millbrae Ave. via Airport International Terminal
<b>Energy</b>											
• Exposure to Electromagnetic Fields (EMF)	• Minimal long-term exposure because of distance to and shielding of EMF sources from sensitive receptors.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• No effect.	• No effect.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.	• Same as Aerial Design Option LPA.
• Regional Consumption (in billions of Btus/day)	• 835.54	• 835.58	• 835.58	• 838.22	• 834.47	• 835.57	• 835.61	• 835.60	• 835.59	• 835.55	• 835.65
• BART Electrical Requirements (in millions of Btus/day)	• 255.57	• 300.03	• 295.37	• Not Applicable.	• Not Applicable.	• 290.25	• 333.91	• 322.85	• 307.0-307.58	• 267.89	• 371.29
<b>Section 4(f) Evaluation</b>											
• Loss of parklands	• No effect, unless contractor laydown Alternative A is selected, in which case possible constructive use at Lion's Field Park.	• Francisco Terrace Play Lot in South San Francisco, Herman Tot Lot and 7th & Walnut Parks in San Bruno.	• Francisco Terrace Play Lot in South San Francisco, 7th & Walnut Park in San Bruno.	• No effect.	• No effect.	• Francisco Terrace Play Lot in South San Francisco, Posy Park in San Bruno.	• Francisco Terrace Play Lot in South San Francisco, Marino Vista Park in Millbrae.	• Francisco Terrace Play Lot in South San Francisco, Posy Park in San Bruno, and Marino Vista Park in Millbrae.	• Francisco Terrace Play Lot in South San Francisco, Posy Park in San Bruno, and possible take at Lion's Field Park. <sup>3</sup>	• Francisco Terrace Play Lot in South San Francisco, Posy Park in San Bruno.	• Francisco Terrace Play Lot in South San Francisco, and possible take at Lion's Field Park. <sup>3</sup>

Note:  
(3) Identified impacts do not affect the environment in all cases. Bold and underlined impacts indicate significant and unavoidable impacts.  
This information has been added to this summary table to reflect analysis in the DEIR/SDEIS.





